APPENDIX A

IN THE COMMONWEALTH COURT OF PENNSYLVANIA

No. 724 C.D. 2007

[Filed December 12, 2007]

UMCO Energy, Inc., Petitioner	)
v.	)
Department of Environmental Protection, Respondent	)

Argued: October 10, 2007

BEFORE: HONORABLE BONNIE BRIGANCE LEADBETTER, President Judge
HONORABLE JAMES GARDNER COLINS, Judge
HONORABLE BERNARD L. McGINLEY, Judge
HONORABLE DORIS A. SMITH-RIBNER, Judge
HONORABLE DAN PELLEGRINI, Judge
HONORABLE ROBERT SIMPSON, Judge

HONORABLE MARY HANNAH LEAVITT, Judge

OPINION

BY JUDGE LEAVITT

UMCO Energy, Inc. (UMCO) petitions for review of an adjudication of the Environmental Hearing Board (EHB) denying UMCO's appeal from an order of the Pennsylvania Department of Environmental Protection (Department). The Department's order restricted UMCO to a technique known as "room-and-pillar"mining in a section of one of its mines in Washington County. In this case we consider whether the Department's authority under the Clean Streams Law.[1] to regulate activities that may impact the Commonwealth's waters is superseded by regulations on mining operations contained in the Bituminous Mine Subsidence and Land Conservation Act (Mine Subsidence Act).[2] We also consider whether the Department's order violated UMCO's equal protection rights. For the reasons that follow, we will affirm the EHB.

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[1] Act of June 22, 1937, P.L. 1987, *as amended*, 35 P.S. §§691.1 - 691.1001. The Department is the Commonwealth agency responsible for administering and enforcing the Mine Subsidence Act, the Clean Streams Law, Section 1917-A of the Administrative Code, and the rules and regulations promulgated thereunder

[2] Act of April 27, 1966, P.L. 31, *as amended*, 52 P.S. §§1406.1 - 1406.21.

The facts in this case are not in dispute. UMCO is a Pennsylvania corporation that operates an underground bituminous coal mine known as the High Quality Mine in Fallowfield Township, Washington County. Initially, the Department permitted UMCO to extract coal using the room-and-pillar method.[3] Beginning in May 2002, the Department issued a series of permit revisions allowing UMCO to use the longwall mining method[4] provided that it did not

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[3] The "room and pillar" method consists of a two-step process.

> During the first step, as coal is removed from the mine, blocks of coal known as pillars are left in place in a pre-planned pattern to support the strata overlying the coal seam being mined. Second, when the primary mining is substantially completed in a particular area, the coal pillars are systematically removed as the mining operation retreats. Operators seek to remove as many coal pillars as possible, consistent with safety.

Robert E. Beck, *COLLOQUIM ON SMCRA: A TWENTY YEAR REVIEW: Protecting The Public Interest or Surface Owners From Their Own Folly?: A Close Look At "Preventing" Subsidence Under the Surface Mining Control and Reclamation Act of 1977 (SMCRA)*, 21 S.Ill.U.L.J. 391, 411 (1997)(citing *Keystone Bituminous Coal Association v. Duncan*, 771 F.2d 707, 710 (3d Cir. 1985)).

[4] Longwall mining is conducted through the use of large machines that extract virtually all the coal within a rectangular area known as a panel without leaving pillars to support the mine roof. As the mining machine moves through the panel, the mine roof collapses behind the machine causing subsidence of the surface overlaying the panel, and often results in loss or damage to natural water resources. This Court has previously described longwall mining as follows:

> The longwall method is generally favored by the industry

infringe on the "no subsidence zones" that were designated for several streams above the mine. Two of these streams are at issue in the present action and have been designated as the "4E/5E Stream" and the "6E Stream." The streams are so-named because of their position relative to the underlying panels in High Quality Mine; the 4E/5E Stream lies above the 4E and 5E panels and the 6E Stream lies above the 6E panel. The 4E/5E Stream and the 6E Stream have the same hydrogeology. Both are headwater streams that receive natural flow from the surface runoff, springs, seeps, and shallow groundwater. The 6E Stream is a perennial stream that flows continuously throughout the calendar year.

UMCO began longwall mining in the 4E and 5E panels in 2004. As a result, the 4E/5E Stream lost flow and eventually became dry.[5] UMCO attempted to restore flow to the 4E/5E Stream by filling cracks and

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> because it results in an extremely high recovery rate at a relatively low cost. It also requires fewer employees than the room-and-pillar method and is considered to be relatively safer.... Moreover, longwall mining is an accepted method of under ground mining which was contemplated by both federal and state mining regulations.... However, the major drawback to longwall method is that as practiced today, it causes subsidence of the surface.

People United to Save Homes v. Department of Environmental Protection, 789 A.2d 319, 323 (Pa. Cmwlth. 2001) (internal citation omitted).

[5] In addition, all of the springs above the 3E, 4E, and 5E panels stopped flowing after UMCO commenced long wall mining in the 4E and 5E panels.

adding public water through a fire hydrant. UMCO twice attempted to discontinue the public water flow to show that the natural flow had returned to the 4E/5E Stream; however, the 4E/5E Stream never regained natural flow. As a result, UMCO continues to add public water to the 4E/5E Stream to maintain flow.[6]

UMCO sought an informal permit revision to lift the no-subsidence zone over the 6E panel. The Department requested UMCO to submit hydrological studies to predict the effects of longwall mining on the 6E Stream. UMCO predicted that the longwall mining of the 6E panel would have the same effect on the 6E Stream that the mining of the 4E and 5E panels had on the 4E/5E Stream, *i.e.*,a loss of flow. The study concluded, however, that mining would not have any long term adverse impacts on the 6E Stream. The Department rejected the UMCO's study and concluded that longwall mining would cause permanent, irreparable damage to the 6E Stream. As are result, on November 12, 2004, the Department issued an order modifying UMCO's permit to preclude mining beneath the 6E Stream. The Department permitted UMCO to use other mining methods in the 6E panel and to use longwall mining in other panels of the mine.

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[6] UMCO pumped a total of 28,340,000 gallons of public water into the 4E/5E Stream between May 20, 2004, and September 16, 2005.

UMCO filed an appeal with EHB on November 12, 2004,[7] followed by an amended appeal on February 2, 2005. UMCO's amended appeal was limited to the following issues: (1) whether the Mine Subsidence Act precluded the Department from using its authority under the Clean Streams Law to revise UMCO's permit to mine the 6E panel; (2) whether the Clean Streams Law and its regulations extended to small perennial streams like the 6E Stream; and (3) whether the Department's order prohibiting longwall mining in the 6E panel violated UMCO's equal protection right under the United States Constitution and Pennsylvania Constitution.[8] The parties proceeded in a hearing before the EHB.

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[7] UMCO also filed a supersedeas petition, which was denied. UMCO subsequently filed a petition for review of the supersedeas denial to this Court, which this Court rejected.

[8] Prior to the date set for the close of discovery, UMCO petitioned the Pennsylvania Supreme Court to assume King's Bench jurisdiction over the matter. The Supreme Court rejected UMCO's petition. UMCO later publicly announced that it would be closing the mine at issue. As a result, the Department filed a motion to dismiss the appeal as moot. The EHB denied the Department's motion and a hearing was scheduled. After the close of discovery and one week before the hearing date, UMCO designated for the first time several experts it intended to call at the hearing. In response, the Department filed a *motion in limine*, which was denied by the EHB. Instead, the EHB issued an order postponing the hearing to allow the Department to conduct discovery with respect to the newly identified experts. UMCO again filed a petition for review with this Court to review the EHB's order postponing the hearing, but it later withdrew that petition.

At the hearing, the EHB heard expert testimony from both sides. There was "no dispute among all of the experts that longwall mining the 6E [p]anel would have disrupted flow in the 6E Stream, springs, seeps, and wetlands." EHB Opinion, dated Sept. 5, 2006, at 44, Finding of Fact No. 284. Although UMCO's experts opined that the 6E Stream would eventually recover, they were unwilling to predict when and, moreover, "conced[ed] that it is possible that the 6E Stream will never recover." EHB Opinion, dated Sept. 5, 2006, at 45, Finding of Fact No. 287. Based on the adverse effects of longwall mining on the 4E/5E Stream and the lack of adequate ground between the 6E Stream and the 6E panel, the Department's experts testified that the 6E Stream would be irreparably harmed by the proposed longwall mining of the 6E panel. The experts for intervenor, Citizens for Pennsylvania's Future (PennFuture), agreed with this opinion. The EHB found that, unlike UMCO's experts, the experts for the Department and PennFuture had extensive training and experience relative to the impact of subsidence on surface waters. Therefore, the EHB credited the testimony of the Department's and PennFuture's experts and rejected as not credible the opinions of UMCO's experts.

The EHB issued its opinion on September 5, 2006. The EHB found that the 6E Stream was a perennial stream that would be permanently dewatered by UMCO's longwall mining of the 6E panel. The EHB concluded that the Department had authority under the Clean Streams Law to prohibit UMCO from conducting longwall mining on the 6E panel because of the danger of pollution to the waters of the Commonwealth in the 6E Stream. The EHB left the

record open for UMCO to introduce evidence in support of its claim that it had been denied equal protection. On March 19, 2007, the EHB issued an amended adjudication rejecting UMCO's equal protection claim. The EHB found that UMCO failed to prove that surface developers and underground coal mine operators were similarly situated. The EHB further found that, even assuming a mine operator was similar to a surface developer, UMCO failed to prove it was treated disparately. The present appeal followed.

Before this Court, UMCO raises the following issues: (1) whether the EHB erred in concluding that the Mine Subsidence Act does not prohibit the Department from regulating mining activities under the Clean Streams Law if those activities will impact Commonwealth waters; (2) whether the EHB erred in concluding that the Clean Streams Law and its regulations protect all waters of the Commonwealth, including small perennial streams; and (3) whether the EHB erred in concluding that the Department's order limiting longwall mining did not violate UMCO's equal protection rights. We will address UMCO's contentions *seriatim*.[9]

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[9] This Court's standard of review of a decision from the EHB is whether findings of fact were supported by substantial evidence and whether constitutional violations or errors of law were committed. *City of Erie (Council) v. Department of Environmental Protection*, 844 A.2d 586, 589 n.4 (Pa. Cmwlth. 2004)

The Department's Revision of Mine Permits Under Authority of Clean Streams Law

In its first issue, UMCO contends that the Department must issue a mining permit where the operator's proposed plan to prevent mine subsidence adopts every technically and economically feasible measure to prevent subsidence, in satisfaction of Section 5(e) of the Mine Subsidence Act. UMCO argues that the permit must be issued even where the proposed plan will not prevent the destruction of a perennial stream, in violation of the Clean Streams Law.[10] Stated otherwise, UMCO argues that Section

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[10] Under the Clean Streams Law, the Department has legal authority to issue orders to prevent the pollution of waters of the Commonwealth, which are defined very broadly to include "any and all rivers, streams . . . or parts thereof." 35 P.S. § 691.1. Section 610 of the Clean Streams Law provides:

> The department may issue such orders as are necessary to aid in the enforcement of this act. Such orders shall include, but shall not be limited to, orders modifying, suspending, or revoking permits . . . . Such an order may be issued if the department finds that a condition existing in or on the operation involved in causing or in creating a danger of pollution of the waters of the Commonwealth . . . .

35 P.S. § 691.610. *See also* 35 P.S. § 691.611 (unlawful to commit water pollution); 36 P.S. § 691.5 (the Department has authority to issue orders.); 25 Pa. Code § 86.37 (there must be no presumptive evidence of pollution to waters of the Commonwealth); 25 Pa. Code § 89.36 (the mine operator must ensure protection of the hydrologic balance and prevent adverse hydrologic consequences); 25 Pa. Code § 89.65(a) (the mine operator must protect environmental values); 25 Pa. Code § 89.142a (mine operator must protect values and uses of streams). In this case UMCO does

5(e) of the Mine Subsidence Act supersedes any other statute that might apply to mine subsidence, including the Clean Streams Law.

We begin by a review of Section 5(e) of the Mine Subsidence Act, on which UMCO bases its argument that the Clean Streams Law has no relevance to the issuance of a mine subsidences permit. Section 5(e) states:

> An operator of a coal mine subject to the provisions of this act shall adopt measures and shall describe to the department in his permit application measures that he will adopt to prevent subsidence causing material damage to *the extent technologically and economically feasible,* to maximize mine stability, and to maintain the value and reasonable foreseeable use of such surface land: *Provided, however, That nothing in this subsection shall be construed to prohibit planned subsidence in a predictable and controlled manner* or the standard method of room and pillar mining.

52 P.S. §1406.5(c) (emphasis added). UMCO reads this provision to mean that a mining operator is required to "prevent subsidence" but only "to the extent technologically and economically feasible." *Id.* A mining operation that adopts such a plan, UMCO

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challenge the Department's authority under the Clean Streams Law, but rather, whether said authority is preempted by Section 5 of the Mine Substance Act.

argues, is exempt from the standards in the Clean Streams Law.

As in any statutory construction[11] issue, the goal is to "ascertain and effectuate the intention of the General Assembly." 1 Pa. C.S. § 1921(a). Generally, a statute's plain language provides the best indication of legislative intent. *See Commonwealth v. McClintic*, 589 Pa. 465, 472, 909 A.2d 1241, 1245 (2006). A statute shall be construed to give effect to all its provisions so that no provision is mere surplusage. 1 Pa. C.S. § 1921(a). Additionally, although we must "listen attentively to what a statute says[;] one must also listen attentively to what it does not say." *Kmonk-Sullivan v. State Farm Mutual Automobile Insurance Co.*, 567 Pa. 514,525, 788 A.2d 955, 962 (2001).

Applying these principles here, we conclude that UMCO's construction of Section 5(e) must be rejected. It does not comply with the plain language of the Mine Subsidence Act and does not give full effect to the entire statute. UMCO's theory that its subsidence plan is exempt from the Clean Streams Law lacks merit.

First, Section 5(e) does not state that other statutes or regulations have no application to a mine operator's activities. Section 5(e) states simply that nothing in "this subsection" -- *i.e.*, Subsection (e) of Section 5 of the Mine Subsidence Act – shall be construed to prohibit planned and controlled subsidence. For

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[11] Where the question is one of statutory construction, this Court's review is plenary as it poses a pure issue of law. *Snizaski v. Workers' Compensation Appeal Board (Rox Coal Co.)*, 586 Pa. 146, 891, A.2d 1267, 1272 (2006).

example, Section 5(e) requires mine operators to use what is "technologically and economically feasible" to prevent subsidence. As clarified in the "provided, however" clause of Section 5(e), the existence of this requirement should not be construed to mean that a mine operator's plan must prevent any and all subsidence.

Second, UMCO's exemption theory is directly contradicted by Section 9.1 of the Mine Subsidence Act, 52 P.S. § 1406.9a, which specifically preserves the statutory protections for the waters of the Commonwealth. Section 9.1(d) states as follows:

> *Nothing in this act shall be construed to amend, modify or otherwise supersede* standards related to prevailing hydrologic balance contained in the Surface Mining Control and Reclamation Act of 1977 (Public Law 95-87, 30 U.S.C. § 1201 et seq.) And regulations promulgated by the Environmental Quality Board for the purpose of obtaining or maintaining primary jurisdiction over the enforcement and administration of that act nor *any standard contained in the act of June 22, 1937 (P.L. 1987, No. 394), known as "The Clean Streams Law," or any regulation promulgated thereunder* by the Environmental Quality Board.

52 P.S. § 1406.9a(d) (emphasis added). Section 9.1(d) applies to the entire Mine Subsidence Act. Therefore, it expressly provides that nothing in the Mine Subsidence Act, including Section 5(e), shall be construed to amend, modify or otherwise supersede the Clean Streams Law or its regulations.

Third, UMCO's theory is inconsistent with this Court's decision in *People United to Save Homes (PUSH) v. Department of Environmental Protection,* 789 A.2d 319 (Pa. Cmwlth. 2001). In *PUSH,* the petitioner, a citizen group, challenged the Department's approval of a permit revision to allow longwall mining. The petitioner contended that the mining operator's application did not comply with Section 5(e) of the Mine Subsidence Act even though the operator had adopted measures to prevent subsidence "to the extent technologically and economically feasible." The petitioner argued that Section 5(c) should be interpreted to mean that mining should not be allowed unless the operator was able to prevent any damage to homes caused by subsidence. The EHB held, however, that Section 5(c) permitted "longwall mining *unless the homes undermined would be irreparably harmed." Id.* at 328 (emphasis added).

This Court affirmed the EHB, explaining that, under Sections 5(e) and 9.1(d),

> [c]oal mining companies were required to adopt measures that would prevent material damage to surface structures to the extent technologically and economically feasible, and if mining were to result in irreparable damage, the Department could prohibit such mining.

Id. at 325. Notably, this Court also affirmed the EHB's holding that the permitted mining operations would not cause pollution to the waters of the Commonwealth, as the term is defined in Clean Streams Law. *Id.* at 329.

In sum, we reject UMCO's broad reading of Section 5(e) of the Mine Subsidence Act, which establishes that mining operators do not have to prevent *any* subsidence so long as they pursue technologically feasible measures to prevent subsidence. On the other hand, Section 5(e) does not establish that all subsidence, even that which would result in a violation of the Clean Streams Law, may occur so long as the mine operator adopts technologically feasible measures to prevent that subsidence. Most importantly, Section 9.1(d) makes it clear that Section 5(e) cannot be read to supersede the Clean Streams Law.

The EHB found that the 6E Stream was a perennial stream that would be permanently dewatered by UMCO's longwall mining of the 6E panel, in violation of the Clean Streams Law. We agree and hold that the Department had authority under the Clean Streams Law to prohibit UMCO's longwall mining of the 6E panel, even though UMCO adopted measures to maintain the 6E Stream to the extent technologically and economically feasible.

The Clean Streams Law and Small Perennial Streams

UMCO next argues that the EHB erred in its application of regulation at 25 Pa. Code § 89.142a(h), which sets forth subsidence and control performance standards. The EHB interpreted this regulation to mean that the Department has legal authority to protect the values and uses of perennial streams regardless of size. UMCO argues that the regulation applies only to "large," continuously flowing perennial streams, not to a stream so small that it has no name,

such as the "6E Stream."[12] In support, UMCO directs the Court to the preamble to the regulation, which states that the regulation applies to "larger streams."[13]

UMCO asserts that the preamble must be considered in construing the regulation because there exists an ambiguity as to what types of perennial streams qualify for protection -- *i.e.*, only large perennial streams or all perennial streams regardless

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[12] UMCO additionally asserts that the 6E Stream does not flow continuously throughout the year. However, the EHB found, as fact, that the 6E Stream "flows continuously throughout the year, year in and year out." EHB Opinion, dated Sept. 5, 2006, at 54; *see also* EHB Opinion, dated Sept. 5, 2006, at 27, Finding of Fact No. 158. UMCO has not challenged the EHB's findings of fact as unsupported by substantial evidence of record. Accordingly, the parties and this Court are bound by the unchallenged facts as found by the EHB.

[13] The discussion and comments to the preamble state:

> The [Pa. Environmental Quality Board] believe that the current regulation in combination with the Department's technical guidance on perennial stream protection . . . provides sufficient protection for perennial streams located above and adjacent to the underground mines. Since implementing the guidance in January 1994, the Department has not encountered any situation when perennial streams have been adversely affected by diminution due to underground mining. *The Board notes that the subsection applies only to larger streams which flow continuously throughout the calendar year, and that there are interests who believe that its application should be expanded to include smaller streams.*

28 Pa.Bull. 2761 (June 13, 1998(emphasis added). Based on the foregoing, UMCO argues that the 6E Stream is not entitled to regulatory protection because it is a "smaller" stream.

of size. It is true that preambles may be used to resolve an ambiguity in a statute.[14] However, preambles may not be used to create ambiguity where none exists, and in any case where a preamble is used as a tool to resolve an ambiguous law, the preamble is not controlling. *English v. Commonwealth*, 816 A.2d 382, 387(Pa. Cmwlth. 2003). Before we look to the preamble for aid in construing the regulation, we must first find that the regulation creates an ambiguity.

We turn then to the language of the regulation in question. Section89.142a(h) addresses the protection of perennial streams by subsidence control and states as follows:

(h) Perennial streams.

(1) *Underground mining operations shall be planned and conducted in a manner which maintains the value and reasonably foreseeable uses of perennial streams,* such as aquatic life; water supply; and recreation, as

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[14] Section 1924 of the Statutory Construction Act of 1972 provides as follows:

> The title and preamble of a statute may be considered in the construction thereof. Provisos shall be construed to limit rather than to extend the operation of the clauses to which they refer. Exceptions expressed in a statute shall be construed to exclude all others. The headings prefixed to titles, parts, articles, chapters, sections and other divisions of a statute shall not be considered to control but maybe used to aid in the construction thereof.

1 Pa. C.S. §1924.

> they existed prior to coal extraction beneath streams.
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> (2) If the Department finds that the underground mining operations have adversely affected a *perennial stream*, the operator shall mitigate the adverse effects to the extent technologically and economically feasible, and, if necessary, file revised plans or other data to demonstrate that future underground mining operations will meet the requirements of paragraph (1).

25 Pa. Code §89.142a(h). The regulation states, quite simply, that underground mine operators must conduct their activities in a manner that will maintain the values and reasonably foreseeable uses of "perennial streams." The regulation does not distinguish between large and small perennial streams; it applies to all perennial streams regardless of size.

Nevertheless, UMCO sees an ambiguity because the regulation contains two definitions of perennial streams. One definition relates to subsidence control, and the other relates to erosion and sediment control.[15]

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[15] The definition of perennial streams found in the erosion and sediment control regulations states:

> Perennial stream -- A body of water flowing in a channel or bed composed primarily of substrates associated with flowing waters and is capable, in the absence of pollution or other manmade stream disturbances, of supporting a benthic macroinvertebrate community which is composed

Neither definition, however, distinguishes between large and small streams. Most significantly, there is no ambiguity because there is only one definition applicable to subsidence control, *i.e.*, the subchapter including 25 Pa. Code § 89.142a. This definition states, in relevant part, as follows:

> *For the purposes of this subchapter,* perennial stream is a strean or part of a stream that flows continuously throughout the calendar year as a result of groundwater discharge or surface runoff. Th term does not include intermittent or ephemeral streams.

25 Pa. Code 89.141(b)(2) (emphasis added). Because there is no ambiguity in the regulation about whether a perennial stream must be large or small before the mine subsidence control regulation is triggered, there is no reason to consult the preamble of the regulation.

UMCO concedes that the 6E Stream is a perennial stream, and it does not challenge this factual finding

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> of two or more recognizable taxonomic groups of organisms which are large enough to be seen by the unaided eye and can be retained by a United States Standard No. 30 sieve(28 meshs per inch, 0.595 millimeter openings) and live at least part of their life cycles within or upon available substrates in a body of water or water transport system.

25 Pa. Code §89.5.13(2)

of the EHB.[16] Whether the 6E Stream is a large or small perennial stream is irrelevant. UMCO's contrary position finds no support in the Clean Streams Law, which does not categorize between large and small streams; rather, it defines the waters of the Commonwealth to include "any and all . . . streams." 35 P.S. § 691.1. The definition of pollution pertains to "any waters" and without limitation to type of harm. *Id.*

In sum, there is no ambiguity in the mine subsidence control regulation. The EHB correctly interpreted the plain language of 25 Pa. Code § 89.142(h) to mean that the Department has authority to regulate a mining activity in order to protect the "values and reasonably foreseeable uses of perennial streams" regardless of their size. Accordingly, we will affirm the EHB in this regard.

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[16] The Board explained as follows:

> The 6 E Stream is perennial. It is perennial under every conceivable regulatory definition. Thus, this appeal does not implicate the Department's authority to regulate the adverse effects of subsidence or intermittent or ephemeral streams. The 6E Stream flows continuously throughout the year, year in and year out. Biological evidence supports that finding, but there is plenty of other evidence, including eyewitness testimony, to support the characterization of the stream as perennial even without the biological evidence

EHB Opinion, dated Sept. 5, 2006, at 53-54.

UMCO's Equal Protection Rights Under the Constitutions of United States and Pennsylvania

Finally, UMCO argues that the prohibition of its proposed longwall mining of the 6E panel violated its right to equal protection under the law as guaranteed by the United States and Pennsylvania Constitutions.[17] UMCO asserts that in its enforcement of the Clean Streams Law, the Department "intentionally and systematically creates arbitrary classifications." UMCO Brief at 40. Specifically, UMCO contends that the Department treated it differently from surface developers under the Clean Streams Law by disallowing mining that would result in the permanent dewatering of a stream, while at the same time allowing surface land developers to fill or culvert streams.

UMCO's burden is a heavy one. It must show that the Department's disparate treatment "clearly, palpably and plainly" violates its constitutional right to equal protection under the law. *Commonwealth v. Sutley*, 474 Pa. 256, 260-61, 378 A.2d 780, 782 (1977). The essentials of equal protection under the United States and Pennsylvania Constitutions have been explained by our Supreme Court as follows:

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[17] Our Supreme Court treats equal protection claims under the Fourteenth Amendment to the United States Constitution the same as equal protection claims brought under Article I, Section 26 and Article III, Section 32 of the Pennsylvania Constitution. *Commonwealth v. Albert*, 563 Pa. 133,138, 758 A.2d 1149, 1151 (2000) (quotation omitted)

> *The essence of the constitutional principle of equal protection under the law is that like persons in like circumstances will be treated similarly.* However, it does not require that all persons under all circumstances enjoy identical protection under the law.
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> *The right to equal protection under the law does not absolutely prohibit the Commonwealth from classifying individuals for the purpose of receiving different treatment, and does not require equal treatment of people having different needs.* The prohibition against treating people differently under the law does not preclude the Commonwealth from resorting to legislative classifications, provided that those classifications are reasonable rather than arbitrary and bear a reasonable relationship to the object of the legislation. In other words, a classification must rest upon some ground of difference which justifies the classification and have a fair and substantial relationship to the object of the legislation.

Curtis v. Kline, 542 Pa. 249, 254-255, 666 A.2d 265, 267-268 (1995) (emphasis added).[18] Here, there is no

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[18] Legislative classifications are: (1) classifications which implicate a "suspect" class or a fundamental right; (2) classifications implicating an "important" though not fundamental right or a"sensitive" classification; and (3) classifications which involve none of these. *Probst v. Departmentof Transportation, Bureau of Driver Licensing*, 578 Pa. 42, 56, 849 A.2d 1135, 1143-1144 (2004). The degree of scrutiny is determined by the type of interest affected by the statutory classification, and classifications relating

claim that the Clean Streams Law has established classifications. Indeed, the statute protects streams without regard to the identity of the person or activity that violates its terms. Stated otherwise, the Clean Streams Law does not treat surface developers differently from underground mine operators.

This case is one of alleged discriminatory enforcement. In order to establish discriminatory enforcement, the party claiming such discrimination must prove that the system of enforcement had a "discriminatory effect" and was "motivated by a discriminatory purpose." *Correll v. Department of Transportation, Bureau of Driver Licensing*, 726 A.2d 427, 431 (Pa. Cmwlth. 1999) (citing *Wayte v. United States*, 470 U.S. 598, 609 (1985)). This is particularly difficult to prove. Indeed, this Court long ago observed that the "concept of equal protection does not require that [the administrative agency] attack a problem all at once or not at all." *Life Insurance Company of North America v. Insurance Department*, 402 A.2d 297,299

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to the right to engage in a lawful occupation are to be analyzed under the rational basis test. *Plowman v. Department of Transportation, Bureau of Driver Licensing*, 535 Pa.314, 319, 635 A.2d 124, 126 (1993). As explained by our Supreme Court, the rational basis test requires a two-step analysis:

> First, we determine whether the challenged statute seeks to promote any legitimate state interest or public value; and if so, we then determine whether the legislative classification is reasonably related to accomplishing that articulated state interest.

Kramer v. Workers' Compensation Appeal Board (Rite Aid Corp.), 584 Pa. 309, 335, 883 A.2d 518, 534 (2005).

(Pa. Cmwlth. 1979). Stated otherwise, the Department does not have to respond to every violation of statute in an identical fashion to avoid an equal protection challenge.

Here, UMCO asserts that it was discriminatory for the Department to allow surface developers to divert and culvert streams. First, these permits were not issued under the Clean Streams Law, but under the Dam Safety and Encroachments Act.[19] UMCO's equal protection argument, however, is based upon the Clean Streams Law. Second, UMCO has not requested to culvert or divert the 6E Stream under the Dam Safety and Encroachments Act, or under any statute. Third, although the Department has issued permits for converting or relocating streams, and/or filling wetlands, the evidence was uncontroverted that it has never issued such a permit for a project that would destroy a perennial stream. Here, the EHB found that UMCO's longwall mining of the 6E panel would result in the permanent elimination of the 6E Stream.

In short, UMCO failed to establish that the Department has enforced the Clean Streams Law in a way to discriminate against UMCO. The Department permitted UMCO to longwall mine under the 4E/5E Stream on three occasions. It was only after UMCO caused the 4E/5E Stream to become dewatered that the Department took action to prevent a similar loss of flow in the 6E stream, while at the same time allowing UMCO to continue to longwall mine other mine panels

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[19] Act of November 26, 1978, P.L. 1375, *as amended*, 32 P.S. §§693.1-693.27.

and to room-and-pillar mine the 6E panel. UMCO has presented no evidence to support its position that the Department's permitting decisions have been driven by malicious intent. *See Village of Willowbrock v. Olech,* 528 U.S. 562, 564 (2000) (a party complaining of an equal protection violation must prove that it has been *intentionally* treated differently from others similarly situated).[20]

UMCO has failed to prove factually that the Department enforced any statute, including either the Clean Streams Law or the Mine Subsidence Act, in a manner that discriminates against UMCO. Accordingly, we hold that UMCO's right to equal protection under the law was not offended by the Department's revision to UMCO's mining permit.

Conclusion

In sum, we reject UMCO's claim that its mine subsidence permit could not be revised by the Department under authority of the Clean Streams Law. We reject UMCO's claim that the 6E Stream was too small of a perennial stream to be governed by the Department's regulation at 25 Pa. Code §89.142a(h). Finally, we reject UMCO's claim that it has been denied equal protection under the law.

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[20] Because UMCO has not requested a permit to culvert a stream, it is not similarly situated to persons that requested and received a permit.

For all these reasons, we affirm the EHB.

/s/
MARY HANNAH LEAVITT, Judge

IN THE COMMONWEALTH COURT OF PENNSYLVANIA

No. 724 C.D. 2007

[Filed December 12, 2007]

UMCO Energy, Inc., Petitioner	)
v.	)
Department of Environmental Protection, Respondent	)

ORDER

AND NOW, this 12th day of December, 2007, the order of the Environmental Hearing Board dated March 19, 2007, in the above captioned matter is hereby AFFIRMED.

/s/
MARY HANNAH LEAVITT, Judge

[Certified from the Record,
December 12, 2007,
and Order Exit]

APPENDIX B

COMMONWEALTH OF PENNSYLVANIA
ENVIRONMENTAL HEARING BOARD

EHB Docket No. 2004-245-L

[Issued: March 19, 2007]

UMCO ENERGY, INC.	)
	)
v.	)
	)
COMMONWEALTH OF PENNSYLVANIA, DEPARTMENT OF ENVIRONMENTAL PROTECTION and CITIZENS FOR PENNSYLVANIA'S FUTURE, Intervenor	)

AMENDED ADJUDICATION

By Bernard A. Labuskes, Jr., Judge

Synopsis:

After considering previously excluded evidence proffered by an underground coal mine operator, the Board finds that the operator was not deprived of the equal protection of the laws vis-à-vis shopping malls and highway builders. Among other things, the operator failed to demonstrate that underground coal

miners and developers of surface projects are similarly situated.

Background

We issued our Adjudication in this appeal on September 5, 2006. We rejected all but one of UMCO Energy, Inc.'s ("UMCO's) challenges to the Department of Environmental Protection's (the "Department's") Order restricting UMCO to room-and-pillar mining under the 6E Stream at one panel of its High Quality Mine in Fallowfield Township, Washington County. At the original hearing on the merits, UMCO proffered evidence in support of its claim that it had been deprived of the equal protection of the law vis-à-vis shopping malls and highway projects. Judge Labuskes granted the Department's and Citizens for Pennsylvania's Future's ("PennFuture's") objections and excluded that evidence, ruling as a matter of law that shopping malls, highway projects, and underground coal mines are not similarly situated. Upon review of the parties' post-hearing briefs, we decided that UMCO should be allowed to put the evidence on the record. We explained that ruling as follows:

> UMCO argues that Judge Labuskes erred by excluding evidence showing that UMCO has been improperly discriminated against vis-à-vis surface developers whose activities "were known to destroy streams." UMCO has contended that the Department treats large retail developments and highway construction projects quite differently than underground coal mines when it comes to regulating impacts on

> streams. We ruled at the hearing that shopping malls and underground coal mines are not similarly situated parties as a matter of law and we excluded the evidence. UMCO made a proper offer of proof and has otherwise properly preserved the issue. Upon reflection, we have decided to allow UMCO to present the evidence that was offered at the hearing to support its claim. We have scheduled a hearing in the near future for that purpose. We will address this aspect of UMCO's equal protection argument following that hearing. We express no opinion here regarding the merits of the claim. There is no overlap between the elements of this claim and UMCO's other objections to the Department's Order, so there was no reason to delay issuance of this Adjudication.

UMCO v. DEP, slip op. at 94-95.[1]

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[1] We went on to reject UMCO's claim that it had been discriminated against vis-à-vis other underground mines. After noting that UMCO waived the objection in its post-hearing brief, we held that UMCO would not in any event have prevailed on the claim:

> We will note for the record that there was no evidence in UMCO's case of any fact pattern where the Department allowed a deep mine operator to mine under a perennial stream knowing in advance that the stream would be permanently dewatered, the only possible exception being UMCO's mining of Panel 5E. The equal protection clause generally prohibits differences in treatment of similarly situated parties based upon a constitutionally suspect standard (not applicable here) or other classification lacking in rational justification. *F.R.&S. Inc. v. DEP*, 1998 EHB 947, 949. There are no similarly situated persons

We held a hearing on UMCO's remaining equal protection claim on September 26, 2006. The last post-hearing brief--UMCO's reply brief--was filed on March 5, 2007. Accordingly, we are now in a position to rule on UMCO's final objection on its merits. The text of our September 5, 2006 Adjudication is incorporated herein by reference. For ease of citation, we will begin numbering the Findings of Fact and the Conclusions of Law at the points where they ended in the original Adjudication.

FINDINGS OF FACT

329. The Department issues Chapter 105 permits to surface developers whose projects will encroach into the waters of the Commonwealth after a review of an application that includes, *inter alia*, an alternatives

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evident here. If there is any party who has been given an unfair advantage vis-à-vis other members of the regulated community, it is UMCO. UMCO was permitted to mine at the shallowest cover longwall mine in the state on a expedited schedule pursuant to "informal permit revisions" issued without public notice of any kind on the basis of poorly developed baseline data. Other operators have been required to submit extensive premining data. (T. 1549.) The Department's witnesses testified convincingly that the Department has not and will not permit any mine where, as here, it is known that a stream will be permanently taken. (T. 970, 983.) UMCO has failed to make a case that the Department has treated similarly situated coal companies dissimilarly and its equal protection claim visà-vis other deep mine operators must fail.

Id., slip op. at 95-96.

analysis and a comparison of the harms and benefits of the project. (T. 1889-92.)

330. The Department has issued Chapter 105 permits for projects that have resulted in culverting streams, relocating streams, and/or filling wetlands. (T. 1847-50, 1868-83.)

331. The Department has never issued a Chapter 105 permit for a project that authorized the permanent elimination of an entire perennial stream and all of the springs, seeps, wetlands, and groundwater hydrology associated with that stream. (T. 1990.) The Chapter 105 permits relied upon by UMCO in support of its claim did not authorize such an event. (FOF 331.).

332. The Department issued UMCO a Chapter 105 permit to eliminate wetlands in order to install a mine shaft on its property in exchange for a monetary contribution to the National Fish and Wildlife Foundation. (N.T. 1902-03.)

333. UMCO received a Chapter 105 permit to perform remedial work in a stream that resulted from unanticipated subsidence damage. (N.T. 1906, 1910-13.)

334. The Department did not treat UMCO differently than any other similarly situated party.

335. There is no record evidence that the Department purposely discriminated against UMCO, acted in bad faith, acted maliciously or invidiously, or created arbitrary or irrational classifications.

DISCUSSION

All persons are entitled to equal protection of the laws. U.S. CONST. Am. 14; PA. CONST., art. I, Section 26. The equal protection clauses of the United States and Pennsylvania Constitutions direct that "all persons similarly situated should be treated alike." *Cleburne v. Cleburne Living Center, Inc.*, 473 U.S. 432, 439 (1985); *Commonwealth v. Albert*, 758 A.2d 1149, 1151 (Pa. 2000); *Curtis v. Kline*, 666 A.2d 265, 267 (Pa. 1995).

There are two types of claims available under the equal protection clause. The first claim is available when a statute or regulation on its face creates an impermissible classification. *See Probst v. Department of Transportation*, 849 A.2d 1135, 1142 (Pa. 2004). Here, UMCO has not alleged that a statute or regulation creates an impermissible classification. The second type of claim is available when a statute or regulation, neutral on its face, is enforced in a discriminatory manner. *Barsky v. Department of Public Welfare*, 464 A.2d 590, 594 (Pa. Cmwlth. 1983), *aff'd*, 475 A.2d 742 (Pa. 1984). The government deprives a person of his or her constitutional right to equal protection of the laws if it applies and administers a facially neutral law, "with an evil eye and an unequal hand, so as to make unjust and illegal discrimination between persons in similar circumstances, material to their rights." *Yick Wo v. Hopkins*, 6 S.Ct. 1064 (1886). Discriminatory enforcement is constitutionally prohibited if it is shown that similarly situated parties receive disparate treatment, the discrimination is purposeful and intentional, and the government's action is based upon

impermissible considerations such as race or religion or an arbitrary classification. *Commonwealth* v. *Parker White Metal Co.*, 515 A.2d 1358, 1363 (Pa. 1986); *Commonwealth v. Lewis*, 279 A.2d 26, 29 (Pa.), *cert. denied*, 92 S.Ct. 571 (1971); *Medussa Corporation v. DER*, 415 A.2d 105, 110 (Pa. Cmwlth. 1980); *F.R.&S., Inc. v. DEP*, 1998 EHB 947, 949-51, *aff'd*, 761 A.2d 634 (Pa. Cmwlth. 2000). UMCO argues that the Department has applied the Clean Streams Law, 35 P.S. § 691.1 *et seq.*, which is neutral on its face, in a discriminatory manner.

UMCO's specific claim is that it has been discriminated against vis-à-vis developers of shopping malls and builders of highways "whose activities were known to destroy streams." UMCO first posits that developers of shopping malls, highways, and underground coal mines are similarly situated because they all can affect the waters of the Commonwealth and they are all subject to regulations promulgated pursuant to Clean Streams Law. UMCO goes on to claim that these allegedly similarly situated parties have been treated dissimilarly because shopping mall developers and highway builders can obtain permits under 25 Pa. Code Chapter 105 to "destroy streams," but UMCO must comply with the rules and regulations applicable to underground coal mines, and those regulations as "misinterpreted" by the Department do not allow UMCO to "destroy streams." UMCO's claim must suffer the same fate as its claim that it was discriminated against vis-à-vis other mining companies. As correctly argued by the Department and PennFuture, UMCO has failed to establish any of the elements of a meritorious equal protection claim.

Preliminarily, as we explained in our Adjudication, the Department has not "misinterpreted" the Clean Streams Law or the underground coal mining regulations promulgated thereunder. The Department's interpretations are eminently reasonable and we have upheld them in all respects. *See Tire Jockey Service, Inc. v. DEP*, No. 178 MAP 2004, 2007 Pa. Lexis 362 (Pa. February 20, 2007) (Department's interpretations to be upheld if Board finds them to be reasonable).

More to the point, UMCO has not convinced us that shopping malls, highway projects, and underground coal mines are similarly situated parties. It is true that all of those projects can adversely affect waters of the Commonwealth, but it is there that any similarity ends. The fact that all of the projects can affect water is too tenuous of a connection, too limited of a commonality, to make them "similarly situated" for purposes of an equal protection analysis.

If having an effect on waters is enough to render parties similar situated, why stop at shopping malls and highway projects? There is a rather long list of activities that are regulated pursuant to the Clean Streams Law, including, for example, the following:

> Submission of official sewage facilities plans. 25 Pa. Code § 71.21.
> Noncoal exploration activities. 25 Pa. Code § 77.109.
> Discharge requirements for oil and gas wells. 25 Pa. Code § 78.60.
> Underground coal mining. 25 Pa. Code § 86.6.
> Surface mining of coal. 25 Pa. Code § 87.102.

Surface mining of anthracite coal. 25 Pa. Code § 88.92.
Underground mining of coal. 25 Pa. Code § 89.52.
Disposal of coal refuse. 25 Pa. Code § 90.102.
Underground disposal of wastes. 25 Pa. Code § 91.52.
Concentrated animal feeding operations. 25 Pa. Code § 92.5a.
Municipal wasteload management. 25 Pa. Code § 94.1.
Erosion and sediment control permits and plans. 25 Pa. Code §102.1.
Siting of underground and aboveground storage tanks. 25 Pa. Code § 245.234.
Land recycling activities. 25 Pa. Code § 250.1.
Permitting for beneficial use of municipal waste. 25 Pa. Code § 271.821.
Construction of waste landfills. 25 Pa. Code § 277.202.
Operation of waste transfer facilities. 25 Pa. Code § 279.213.
Operation of composting facilities. 25 Pa. Code § 281.202.
Use of coal ash as a soil substitute or soil additive. 25 Pa. Code § 287.662.
Storage and transportation of residual waste. 25 Pa. Code § 299.142.

UMCO uses shopping malls and highway projects as examples, but if the class is defined as UMCO has defined it to include all activities having an impact on streams, and therefore, all activities that are regulated under the Clean Streams Law, the class should include landfills, sewage plants, industrial dischargers,

construction projects, surface coal mines, quarries, railroads, concentrated animal feeding operations, gasoline stations, etc. In fact, the purported class includes virtually every commercial or development activity in which man can engage. UMCO has not pointed to anything unique about underground mines, shopping malls, and highways that separates them from this broader class.

UMCO's proposed definition of similarly situated parties creates an inappropriate and unmanageable construct. If the Department is required to defend its action involving a deep mine by explaining its actions regarding shopping malls, the next case may require the Department to justify its action against a gasoline station by explaining and comparing it to actions it has taken against sewage plants, or concentrated animal feeding operations. Such strained, far-flung comparisons might form the basis of an interesting philosophical discussion or hold some interest at a visceral level, but they should not be the appropriate subject of Board proceedings. These are not the sort of comparisons envisioned by the equal protection clause, and this is why UMCO's evidence regarding shopping mall projects was initially excluded in this proceeding. Other underground coal mines are at least arguably similarly situated; shopping malls and underground coal mines are not.

UMCO has not explained how or why it would be entitled to the same sort of permits that apply to surface developers. In order to be entitled to a Chapter 105 permit, there must be an "encroachment." Pointedly, UMCO has carefully avoided an allegation that its subsidence impacts on surface waters and

shallow groundwater constitute an "encroachment." It has not so much as mentioned our holding in *Consol Pennsylvania Coal Co. v. DEP*, 2002 EHB 792, wherein another underground coal mine company strenuously argued, and we agreed, that subsidence impacts do *not* in and of themselves constitute an "encroachment."[2] If the subsidence impacts of UMCO's mining will not cause an "encroachment," as UMCO seems to concede, but shopping malls and highway projects do result in "encroachments," it is difficult to understand how these two groups can be considered to be similarly situated parties.

Assuming for purposes of further discussion that UMCO and surface developers are similarly situated, UMCO has not shown that these two supposedly similar groups have received disparate treatment. UMCO's claim of unfair disparate treatment is that shopping mall developers are entitled to destroy or at least impair streams and UMCO is not. It argues that the Department has a "zero tolerance policy" when it comes to its mining even though the "opposite" is true when it comes to shopping malls and highway developers. (Brief at 20.) UMCO is wrong in both respects. Actually, the Department allowed UMCO to continue mining multiple panels even after the first panels were observed to cause more damage than

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[2] The closest that UMCO comes to the subject is a concession in its initial brief that "UMCO recognizes that underground mining is not subject to an encroachment permit to dredge and fill." (Brief at 20.) This statement seems to directly contradict its claim that it is entitled to pursue a Chapter 105 permit and is emblematic of the rather imprecise formulation of its equal protection claim in general.

expected. (FOF 30, 36-37.) As a result of the Department's permitting decisions, UMCO's mining resulted in the systematic elimination of every spring, seep, and stream above its mining. (FOF 38, 223.)[3] Among other things, flow in the formerly perennial 4E/5E Stream has been lost. (FOF 38, 40-41.) It is not clear whether any of these surface and shallow groundwater features will ever be the restored. (FOF 40, 284, 298, 309, 316.) Eventually, when UMCO proposed to longwall mine under a new stream, the 6E Stream, the Department allowed it to mine, but only if it used room-and-pillar mining. The Department did not prohibit UMCO from mining under the 6E Stream. Indeed, UMCO is entitled to mine under the 6E Stream to this day. Still further, UMCO was given permission to move forward with longwall mining in other areas of the mine. (FOF 84.) The Department's Order only related to one method of mining in one of UMCO's eleven mining panels. To suggest that the Department's modest effort to protect what was left of the watershed feeding the second-order tributary to Maple Creek was a "zero tolerance policy" is inaccurate and in no small amount ironic.[4]

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[3] UMCO continues to attempt to limit our focus and our analysis to the 6E Stream as if that is the only relevant factor. We reject that approach with respect to the equal protection objection just as we did when we examined technical aspects of this case. UMCO's approach has as much merit as the proverbial blind man reaching a conclusion regarding the identity of the beast by feeling nothing but the elephant's tail.

[4] Along the same lines, UMCO's contention that the Department has "denied" it "the right to commercially develop its real property interests" falls far from the mark.

It is equally untrue to suggest that the Department has applied "the opposite" of a zero tolerance policy to surface developments. UMCO's theory has no support in the record because UMCO has failed to demonstrate as a matter of fact that any surface developments have been permitted to, in UMCO's words, "destroy streams." UMCO pointed to two projects in the Pittsburgh area, but neither project involved the destruction of any streams. There was some vague reference to a third project that apparently is currently under review (T. 1885, 1887, 1896), but not enough to credibly draw any conclusions and certainly not enough to surmise that any streams are being "destroyed."

UMCO has not drawn our attention to *any* surface development where the Department allowed the developer to irreversibly dewater not only every surface water feature but the entire shallow hydrologic regime in the area of its project. (T. 1890.) UMCO refers to the culverting of streams, but culverting is not unlike the bentonite grouting that UMCO was permitted to try on the 4E/5E Stream. Culverting maintains flow; the bentonite grouting did not. UMCO points to the relocation of streams at surface projects. After relocation, however, there is still a stream; UMCO's mining would have eliminated, not moved, the stream, springs, seeps, wetlands, and shallow groundwater acquifers. There is simply no comparison between UMCO's examples of surface development and what UMCO proposed to do and has done at its High Quality Mine.

When the Department evaluates a surface project that will encroach upon waters of the Commonwealth,

it generally works with the developers to seek a reasonable accommodation, which is not unlike its determination that UMCO could longwall the vast majority of its High Quality Mine but limit its mining to the room-and-pillar method in one panel due to the unprecedented shallow cover between the mining and the shallow groundwater system.

Thus, it appears that the Department did not treat UMCO all that differently than any surface developers. If anything, UMCO may have been treated better. It has not been required to restore or replace lost habitat. It is being permitted to mine under the 6E Stream using traditional methods, even though there is less than 300 feet of cover. UMCO has been permitted to move forward with longwall mining at other parts of the site notwithstanding the presence of numerous additional streams and other surface water features.

In order to show that there has been constitutionally infirm selective enforcement, it is not enough to point out that similarly situated parties have been treated dissimilarly. A State Trooper cannot possibly ticket every driver exceeding the speed limit. It is no defense that there are other speeders. The equal protection clause only arguably comes into play if the speeder in question was selected based upon impermissible considerations. The administration of the law must not only be "intentional or purposeful," the courts use such phrases as "invidious," "malicious," "bad faith," or "administered with an evil eye." *See, e.g., Barsky v. Department of Public Welfare*, 464 A.2d 590, 594 (Pa. Cmwlth. 1983). There is no evidence in this case that UMCO was invidiously singled out.

UMCO appears to concede as much when it suggests, incorrectly, that no such improper basis or invidious motive is necessary. (Brief at 25.) In any event, UMCO certainly does not draw our attention to anything in the record to support a finding of invidious action or intentional and purposeful discrimination.

With regard to UMCO's specific contention that underground mines are not entitled to Chapter 105 permits, but shopping mall developers are, UMCO is simply wrong. To the extent an underground mine's *surface* activities result in an encroachment, it is entitled to a Chapter 105 permit. In fact, somewhat remarkably given UMCO's theory, UMCO's employee admitted in response to questioning by UMCO's attorney that UMCO itself has received Chapter 105 permits at its mine. UMCO was permitted to permanently eliminate wetlands on the site in order to install a mine shaft in exchange for a monetary contribution to the National Fish and Wildlife Foundation. (T. 1902-03.) Still further, UMCO, like other deep mine operators, received a Chapter 105 permit to perform actual remedial work in a stream that resulted from unanticipated subsidence damage. (T. 1906, 1910-13.) Thus, the facts directly contradict UMCO's claim that underground mines and surface developments are treated differently when an encroachment is involved.

There is also no evidence to support UMCO's theory that the Department has created a classification that is based on suspect factors (race, religion, etc.) or an irrational distinction. UMCO notes that surface developers must obtain their permits to encroach upon waters of the Commonwealth through the Chapter 105

permitting process. In contrast, underground mines must obtain their mining permits primarily through the underground mine permitting process. As previously mentioned, where an underground mine does involve surface encroachments, the Chapter 105 permitting process *does* apply. Further, we believe it would be irrational *not* to permit shopping malls and underground coal mines under different regulatory programs. Both the encroachment program and the underground mining programs are fundamentally designed to regulate the amount of pollution that will be allowed. It is perfectly appropriate, not irrational, to achieve that goal with regulations geared specifically toward the many different activities that can result in pollution.

The equal protection clause does not afford all parties an equal opportunity to violate the law. The Clean Streams Law does not envision the permanent destruction of waters of the Commonwealth, at least without replacement of the lost resources under tightly controlled circumstances. *Machipongo Land and Coal Company, Inc. v. DEP*, 799 A.2d 751 (Pa. 2002). Even if UMCO had been able to show that the Department was authorizing illegal activity by way of Chapter 105 permits, it would merely show that the Department was violating the law with respect to those permits, not that UMCO is somehow constitutionally entitled to similar forbearance. Consistency would need to be achieved by correcting the other side of the equation, not authorizing more violations.

Along that same line, even if UMCO had a meritorious claim, it has been rather vague regarding what relief it contends would follow. We agree with the

Department and PennFuture that it certainly does not automatically follow that the Department's Order would need to be vacated. An opportunity to apply for an encroachment permit does not make any sense because UMCO has not identified any "encroachment" that could be the subject of an encroachment permit. It is incumbent upon parties to explain and justify what relief they believe they are entitled to in the event they prevail. *See Schaffer v. DEP*, EHB Docket No. 2005-087-L (Adjudication, December 21, 2006). UMCO has suggested possibilities but not explained or justified any particular remedy in any detail. There is no need to speculate further on what could have been done had UMCO prevailed on its theory.

CONCLUSIONS OF LAW

20. The Department's Order did not improperly subject UMCO to treatment disparate from any other similarly situated party or otherwise deprive UMCO of equal protection of the laws.

COMMONWEALTH OF PENNSYLVANIA
ENVIRONMENTAL HEARING BOARD

EHB Docket No. 2004-245-L

[Issued: March 19, 2007]

UMCO ENERGY, INC.	)
	)
v.	)
	)
COMMONWEALTH OF PENNSYLVANIA, DEPARTMENT OF ENVIRONMENTAL PROTECTION and CITIZENS FOR PENNSYLVANIA'S FUTURE, Intervenor	)

ORDER

AND NOW, this 19th day of March, 2007, it is hereby ordered that our Order of September 5, 2006 is revised to provide that UMCO's appeal is dismissed in its entirety. Jurisdiction is relinquished.

ENVIRONMENTAL HEARING BOARD

MICHAEL L. KRANCER
Chief Judge and Chairman

GEORGE J. MILLER
Judge

THOMAS W. RENWAND
Judge

MICHELLE A. COLEMAN
Judge

BERNARD A. LABUSKES, JR.
Judge

DATED: March 19, 2007

APPENDIX C

COMMONWEALTH OF PENNSYLVANIA ENVIRONMENTAL HEARING BOARD

EHB Docket No. 2004-245-L

[Issued: September 5, 2006]

UMCO ENERGY, INC.	)
	)
v.	)
	)
COMMONWEALTH OF PENNSYLVANIA, DEPARTMENT OF ENVIRONMENTAL PROTECTION and CITIZENS FOR PENNSYLVANIA'S FUTURE, Intervenor	)

ADJUDICATION

By Bernard A. Labuskes, Jr., Judge

Synopsis:

In an appeal from a Department order restricting an underground mine operator to room-and-pillar mining in one of its eleven mining panels, the Board holds that the Department has the legal authority to prohibit longwall mining in the panel where it is very likely that longwall mining will completely and permanently eliminate all flow in a perennial stream

and the springs, seeps, and wetlands appurtenant to that perennial stream. The operator's commitment to perform stream flow replacement with city water from a hydrant does not prohibit the Department from issuing an order protecting the stream from permanent damage. The Board, however, reopens the record to allow the operator to present previously excluded evidence in support of its claim that it was denied equal protection vis-a-vis shopping centers and highway builders.

Procedural History

On November 12, 2004, the Department of Environmental Protection (the "Department") issued an order restricting UMCO Energy, Inc. ("UMCO") to room-and-pillar mining in the 6East (6E) panel of its High Quality Mine in Fallowfield Township, Washington County (the "Order"). That same day, UMCO filed an appeal from the Order with this Board.

On November 15, 2004, UMCO filed a petition for temporary supersedeas and a petition for supersedeas. The day after the petitions were filed, the Board held a conference call with the parties. As a result of the discussions, the Board scheduled a supersedeas hearing to begin three days later, on November 19, 2004. In light of the Board's immediate attention to UMCO's petition for supersedeas, UMCO withdrew its petition for temporary supersedeas. Prior to the hearing, Citizens for Pennsylvania's Future ("PennFuture") and the United Mine Workers of America ("UMWA") intervened. PennFuture intervened on the side of the Department and UMWA intervened on the side of UMCO.

The supersedeas hearing began on November 19, 2004 and continued over the course of three days. The Board conducted a site visit on Saturday, November 20, 2004. We denied UMCO's petition for supersedeas in an Opinion and Order dated November 30, 2004. *UMCO Energy, Inc. v. DEP*, 2004 EHB 797. We found that there would have been an immediate threat to the environment had the supersedeas been issued, the short-term harm being suffered by UMCO was resulting in significant part from its own business decisions and course of conduct, and UMCO had a very low likelihood of prevailing on the merits because it did not appear that UMCO would be able to establish the factual predicate to its legal theories.

On December 2, 2004, UMCO filed a petition to amend the Board's Order to allow for an interlocutory appeal to the Commonwealth Court. As before, UMCO requested the Board's expedited consideration. One day later, on December 3, 2004, UMCO filed a motion for stay of appeal in anticipation of the Commonwealth Court's review. This motion was denied as premature on December 10, 2004 because the Board had not yet ruled on UMCO's petition to amend the Board Order. On December 13, 2004, we denied UMCO's petition to amend the Board Order. *UMCO Energy, Inc. v. DEP*, 2004 EHB 832. We held that a supersedeas ruling is an inappropriate vehicle for bringing issues before the Commonwealth Court. UMCO nevertheless filed a petition for review with the Commonwealth Court on December 22, 2004. The Commonwealth Court rejected UMCO's petition on January 4, 2005.

On February 2, 2005, UMCO filed a motion to amend its notice of appeal. UMCO dramatically

reduced the number of objections contained in its original appeal in order to streamline the proceedings as much as possible. Among other things, UMCO deleted its objection that the Department had acted unreasonably and abused its discretion in issuing the Order. UMCO's amended appeal was limited to three legal issues, which will be discussed in detail below. We granted UMCO's unopposed motion to amend on February 23, 2005.

On February 14, 2005, the Board issued a Pre-Hearing Order requiring all discovery including expert discovery to be completed by May 20, 2005. We scheduled a hearing on the merits for June 20, 2005.

A week later, on February 23, 2005, UMCO filed a petition for extraordinary relief with the Pennsylvania Supreme Court. UMCO asked the Court to assume King's Bench jurisdiction over the case. The Court denied UMCO's petition for extraordinary relief on May 23, 2005.

After filing the petition for extraordinary relief, UMCO publicly announced that it would be closing the High Quality Mine. As a result, the Department filed a motion to dismiss UMCO's appeal as moot. The Board denied the Department's motion to dismiss on May 2, 2005.

Meanwhile, on May 20, 2005, the date by which all discovery was to be completed in the Board's proceedings, UMCO had failed to designate any expert witnesses, provide any expert reports, or otherwise respond to the Department's expert interrogatories. On June 8, 2005, the Department filed a motion in

limine to preclude UMCO from presenting any testimony from experts that it had failed to identify by the discovery deadline. At no time before or after the deadline did UMCO seek an extension from the Board. On June 13, 2005, one week before the scheduled hearing date, UMCO designated several experts for the first time. On June 15, 2005, we denied the Department's motion in limine, but we postponed the hearing until September 19, 2005 in order to provide the Department with an opportunity to conduct discovery regarding the newly identified experts.

On June 28, 2005, UMCO filed a petition with the Commonwealth Court to review the Board's June 15, 2005 Order postponing the hearing until September. The Department and PennFuture wrote to the Board to state their understanding that UMCO's interlocutory appeal stayed all activity in the Board's proceedings. They pointed out that a further postponement of the hearing on the merits would be required pending the Commonwealth's Court review of whether the Board had erred in postponing the hearing due to UMCO's discovery violations. Before we had a chance to react, UMCO voluntarily withdrew its petition for review with the Commonwealth Court.

We held a hearing on the merits from September 19 through 30, 2005. The parties stipulated and we agreed that the supersedeas record would be incorporated in its entirety into the record on the merits. Altogether, there were thirteen days of testimony resulting in 2,464 pages of transcript and dozens of exhibits. The last post-hearing brief was filed on May 12, 2006.

On April 10, 2006, UMWA, which had actively participated in the Board proceedings throughout the entire course of the litigation, filed a motion to withdraw as intervenor without explanation. We granted the unopposed motion.

FINDINGS OF FACT

The Parties

1. The Department is the agency of the Commonwealth that has the duty and authority to administer and enforce the Bituminous Mine Subsidence and Land Conservation Act, 52 P.S. § 1406.1 *et seq.* ("Mine Subsidence Act"), the Clean Streams Law, 35 P.S. § 691.1 *et seq.* ("Clean Streams Law"), Section 1917-A of the Administrative Code of 1929, 71 P.S. § 510-17 ("Administrative Code"), and the rules and regulations promulgated under those statutes. (Joint Stipulation ("J.S.") ¶ 13.)

2. UMCO is a Pennsylvania corporation with a mailing address of 981 Route 917, Bentleyville, Washington County, Pennsylvania 15314. UMCO engaged in the mining of coal by the underground method in Pennsylvania pursuant to License No. 5121. (J.S. ¶ 14.)

3. UMCO is a wholly owned subsidiary of Maple Creek Mining, Inc., a Pennsylvania corporation. Maple Creek Mining is a subsidiary of Murray Energy, Inc. (Notes of transcript from the hearing on the merits, page (hereinafter "T.") 772; Notes of transcript from the supersedeas hearing, page (hereinafter "S.T.") 20; PennFuture Exhibit ("P.F.Ex.") 10.)

4. PennFuture is a Pennsylvania nonprofit corporation with a mailing address of 425 Sixth Avenue, Suite 2770, Pittsburgh, Pennsylvania 15219. (J.S. ¶ 15.)

The Site

5. UMCO operates the High Quality Mine, an underground bituminous coal mine located in Fallowfield Township, Washington County, pursuant to Coal Mining Activity Permit No. 63921301. P.F.Ex. 10; UMCO Hearing Exhibit ("U.Ex.") 55.

6. UMCO mined the Pittsburgh Coal Seam at the High Quality Mine. (S.T. 295; T. 1010.)

7. The Department initially issued Permit No. 63921301 on June 8, 1994. At that time, the permit authorized coal extraction by the room and pillar method. (S.T. 824, 827.) When the permit was first issued, UMCO was not owned by Maple Creek. (S.T. 23-24, 824; T. 174; P.F.Ex. 10.)

8. On June 2, 1997, the permit was revised to reflect the sale of UMCO to Maple Creek. The permit was renewed in November 1999. (T. 72; P.F.Ex. 10; UMCO Supersedeas Exhibit ("U.S.Ex.") I.)

9. The permit was revised on May 6, 2002 to add acreage and allow both full extraction longwall mining and room and pillar mining. (S.T. 824, 827, 890; T. 176, 265, 743; U.S.Ex. I; U.Ex. 55.)

10. Although room and pillar mining is still authorized by the permit, UMCO has concentrated on

longwall mining, except for development mining needed to perform longwall mining. (S.T. 66-67, 827; U.Ex. 14V.)

11. Longwall mining involves full extraction of virtually all of the coal by large machines within a defined rectangular area known as a panel. The machine moves through the panel and the mine roof collapses immediately behind the machine. (S.T. 265-66; T. 1770-71.)

12. UMCO proposed as part of the 2002 permit revision that longwall mining would be conducted in panels designated 1 through 11 (with subdesignations of east or west), and that room and pillar mining would be conducted in other designated areas within the permit boundary. (Commonwealth Hearing Exhibit ("C.Ex.") 12; U.Ex. 14V.)

13. The permit revision imposed "no subsidence zones" on certain segments of streams above the mine. The "no subsidence zones" were created because UMCO was anxious to begin mining but lacked sufficient information about the streams to evaluate the impact of subsidence from longwall mining on those streams. (S.T. 215, 491-93; T. 172-74, 274-75.)

14. The zones were represented as crosshatched areas on six-month mine maps submitted to the Department by UMCO for the mine as "no subsidence pending further hydrologic review." (S.T. 491, 493.)

15. Longwall mining was not allowed within no subsidence zones until hydrologic information for that portion of the stream to be undermined was submitted

to the Department and the Department agreed to lift the no subsidence zone. (S.T. 491; P.F.Ex. 1, 2, 8, 10, 19, 25.)

16. No subsidence zones were designated for streams that were depicted as perennial streams on United States Geologic Survey topographic maps. (S.T. 492; T. 172-74, 275; P.F.Ex. 2.)

17. There are two key streams in this case. The first, which is indirectly relevant, is an unnamed tributary to Maple Creek that runs north to south across Panels 3E, 4E, and 5E (the "4E/5E Stream"). (T. 31-32; C.Ex. 18.)

18. The second stream, which is directly at issue, is another unnamed tributary to Maple Creek that originates at the Rakosky Spring on the 4E Panel, flows in a southerly direction across Panel 5E, and then flows approximately west to east along the length of Panel 6E (the "6E Stream"). There are several springs, seeps, and wetlands that feed into the stream. (S.T. 690-91, 801; T. 33-34; Commonwealth Supersedeas Exhibit ("C.S.Ex.") 12; C.Ex. 18.) The 4E/5E and 6E Streams join to form a single stream south and east of the 6E Panel. That third unnamed tributary in turn flows into Maple Creek. (C.S.Ex. 12; C.Ex. 18.)

19. The 4E/5E and 6E Streams are first-order streams, also known as headwaters streams or upland valley streams. (S.T. 350; T. 245, 256.)

20. The 6E Stream is at least 2,600 feet long. (U.Ex. 16.)

21. The entire length of the 4E/5E Stream was designated as a no subsidence zone. (P.F.Ex. 1, 2, 8, 10, 19, 25.)

22. The 6E Stream was not designated as a "no subsidence zone" and it was not shown on some of the early permit maps. (T. 101; C.Ex. 26.)

23. The streams above the mine are classified as warm water fisheries. (25 Pa. Code § 93.9; T. 249.)

24. In addition to being a warm water fishery, the 6E Stream serves as a drinking water source for cattle and wildlife. (T. 281.) Although the 6E Stream contributes to the flow of Maple Creek, it is too small itself to be used for swimming or boating, and it does not serve as a source of drinking water for human consumption. (T. 250.)

The 3E Panel

25. UMCO submitted an "informal permit revision" to the Department asking to eliminate the no subsidence zone for the 4E/5E Stream above the 3E Panel. UMCO's submission was based upon photographic evidence depicting the stream above the 3E Panel as ephemeral to intermittent. (T. 276-77; P.F.Ex. 2.)

26. On November 14, 2003, the Department granted UMCO's "informal permit revision" and eliminated the no subsidence zone for the portion of the stream above the 3E Panel. The Department did not require a mitigation plan for the stream. (P.F.Ex. 1.)

27. There was no perennial flow in the section of the 4E/5E Stream above the 3E Panel and there was not much of a stream channel over the 3E Panel. (T. 276.)

28. The Department lifted the no subsidence zone in the 3E Panel because UMCO's photographs showed that there was no flow in the 4E/5E Stream at that location at the time the photographs were taken, the Department believed there was sufficient cover (overburden) between the coal seam and the stream to protect the stream (approximately 320-330 feet), and the characteristics of the stream at that location were not consistent with perennial flow. (S.T. 139, 143-45, 500-02, 513-14; T. 175-76, 276; U.S.Ex. AA.)

29. UMCO longwall mined the 3E Panel. (S.T. 145.)

30. UMCO's longwall mining in Panel 3E created more subsidence damage on the surface than expected, as exhibited by extensive damage to several homes and substantial surface distortions. (S.T. 692-96; 876-77; C.S.Ex. 15A, B, C & D.)

31. These effects attracted the Department's attention regarding the potential threat to streams and other potential impacts from longwall mining at the site, particularly because the cover on Panel 3E where the damage was first observed was deeper than the cover on panels proposed for future longwall mining. (S.T. 876.)

The 4E Panel

32. UMCO next applied for an "informal permit revision" to eliminate the no subsidence zone for the section of the 4E/5E Stream above the 4E Panel. (P.F.Ex. 8, 11.)

33. Part of the 4E/5E Stream over the 4E Panel was perennial prior to mining. (S.T. 146, 153, 668; T. 62-64; C.Ex. 18; U.S.Ex. 1.)

34. Two small intermittent tributaries flowed from the east into the 4E/5E Stream in Panel 4E prior to mining. (T. 62-64; C.Ex. 18.)

35. Cover in the 4E Panel ranged from 255 to 320 feet. (T. 1010; U.S.Ex. AA.)

36. Nothwithstanding its heightened concern given the events that occurred in the 3E Panel, the Department agreed to accept UMCO's representation that there would be no damage to the stream from mining the 4E Panel. The Department lifted the no subsidence zone on April 16, 2004. (S.T. 893-94; P.F.Ex. 10, 11, pp. 8-11 to 8-16, 11; U.S.Ex. I.)

37. Longwall mining occurred beneath the 4E/5E Stream over Panel 4E in April and May 2004. (S.T. 147, 204.)

38. As longwall mining occurred beneath the stream, flow was reduced and ultimately eliminated in the stream and in the two intermittent tributaries to the stream. (S.T. 148, 696-98; T. 41; C.S.Ex. 9, 16; C.Ex. 19; P.F. Ex. 19; U.S.Ex. AA.)

39. The stream segment remained dry for 18 days between April 30, 2004 and May 17, 2004. (S.T. 698; T. 41; C.Ex. 19.)

40. UMCO attempted to restore flow in the stream by filling cracks with bentonite clay and adding water pumped from wells to the stream. UMCO's efforts failed to restore flow. (S.T. 148; C.Ex. 19.)

41. On May 20, 2004, the Department issued an order that required UMCO to develop a plan to restore the 4E/5E Stream above the 4E Panel. (T. 744.) UMCO appealed that order to this Board at EHB Docket No. 2004-140-L. That appeal is pending.

42. Notwithstanding its appeal, beginning on or about May 20, 2004, UMCO artificially reestablished stream flow by adding public water from a Charleroi Water Authority hydrant to the 4E/5E Stream channel. (S.T. 809; T. 56-57; C.Ex. 19, 23.) Except for several months in early 2005 (discussed further below), UMCO added public water to the stream from the hydrant on an almost daily basis from May 20, 2004 to the time of the hearing. (The record in this case closed on the last day of the hearing, September 30, 2005.) The rate of public water flow into the stream has typically been between 60 and 80 gallons per minute. (S.T. 809; T. 56-57; C.Ex. 19, 20, 23.)

43. Since April 2004, the two intermittent tributaries to the 4E/5E Stream over Panel 4E have exhibited no flow except in direct response to significant precipitation events. (S.T. 687; T. 62-64, 155; C.Ex. 18, 19.)

44. UMCO installed piezometer PZ-1 in the area of the stream above the 4E Panel. (P.F.Ex. 11.) UMCO sheared off PZ-1 when it longwall mined the 4E Panel, eventually replacing it with another piezometer designated PZ-1R. (T. 181.)

The 5E Panel

45. The Department advised UMCO as early as April 2004 that it might not be allowed to longwall beneath streams above subsequent panels if its mining activities in Panel 4E adversely affected the 4E/5E Stream. (S.T. 877-78; T. 195.)

46. In May 2004, the Department advised UMCO that, based upon the impacts of mining on the stream segment above Panel 4E, the Department would not allow further longwall mining beneath the 4E/5E Stream, specifically, the "continuous flow streams in panels 5 or 6 East." (S.T. 368, 878-80; T. 195, 304; C.S.Ex. 7, 8.)

47. UMCO asked for the opportunity to demonstrate that it could longwall mine while preserving the 4E/5E Stream's uses and hydrology. The Department granted that request. (C.S.Ex. 8.)

48. UMCO's mine plan for the 5E Panel contained a no subsidence zone for the section of the 4E/5E Stream above the panel. (P.F.Ex. 19.)

49. The entire length of the 4E/5E Stream above the 5E Panel was perennial prior to mining. (S.T. 152-53; C.Ex. 18.)

50. On June 9, 2004, UMCO submitted an "informal permit revision application" to allow longwall mining under the 4E/5E Stream in the 5E Panel. (P.F.S.Ex. F; P.F.Ex. 19.)

51. The cover between the coal and the stream on 5E was between 225 and 255 feet. (T. 1010; U.S.Ex. AA.)

52. UMCO's informal submission indicated that the 4E/5E Stream was supported by perched groundwater aquifers created by fractured zones of bedrock that existed above relatively impermeable strata. This shallow groundwater system is separate and distinct from the regional water table, i.e. the deeper groundwater system. That is why the shallow system is referred to as "perched." (P.F.Ex. 19, p. 8-1.)

53. UMCO's submission concluded that the potential existed for a temporary loss of flow to the stream above the 5E Panel, but that mining could occur without long-term adverse impacts. (P.F.Ex. 19, p. 8-11.)

54. UMCO conceded that the stream above the 4E Panel experienced an ongoing flow loss as a result of its prior mining, but it argued that flow would eventually recover. (P.F.Ex. 19, p. 8-16.)

55. The Department asked UMCO what it meant by a "temporary" flow loss. On June 23, 2004, UMCO submitted additional information regarding the stream. UMCO predicted that flow in the 5E section of the stream would be lost, but it would return to

premining conditions within eight to sixteen weeks. (C.Ex. 32; P.F.Ex. 16.)

56. On July 7, 2004, the Department's hydrogeologist and lead permit reviewer, John Kernic, recommended against lifting the no subsidence zone. Kernic referred to the lack of sufficient groundwater data to properly characterize premining hydrologic conditions for the 5E Panel. Kernic expressed concern that the dewatering that had occurred as a result longwall mining under the stream in the 4E Panel would repeat itself in the 5E Panel. (T. 224; P.F.Ex. 46.)

57. On July 8, 2004, the Department denied UMCO's application to revise its subsidence control plan to allow longwall mining beneath the 4E/5E Stream within the 5E Panel (i.e. it refused to lift the no subsidence zone). (T. 308; P.F.Ex. 45.)

58. After meetings with the Department locally and in Harrisburg, UMCO submitted additional materials in an effort to obtain the Department's approval to longwall mine under the 4E/5E Stream in the 5E Panel. (S.T. 494; T. 974.)

59. On July 22, 2004, the Department reversed itself and revised UMCO's permit to authorize longwall mining beneath the 4E/5E Stream in 5E Panel. (S.T. 894; P.F.Ex. 25.)

60. The Department allowed the mining of Panel 5E to go forward because some Departmental personnel, particularly in Harrisburg, accepted UMCO's representation that the stream dewatering

would last only three to six months and UMCO submitted a mitigation plan that included (i) temporary flow augmentation with dechlorinated public water during that period, (ii) premining grouting of the stream channel, (iii) a $250,000 bond, (iv) continuous flow monitoring during subsidence of the stream, and (v) stream channel repairs as required. (T. 155, 164-65, 308-312, 354-55; C.Ex. 19-20; U.Ex. 119.)

61. Mining in the 5E Panel began on July 30, 2004. (C.Ex. 20.) Mining occurred beneath the stream on or about August 14-18, 2004. (C.Ex. 19.)

62. Because of the ongoing flow loss in the 4E/5E Stream above the previously mined 4E Panel upstream of the 5E Panel, UMCO continued to augment flow to the 4E/5E Stream during the mining of the 5E Panel. (C.Ex.20.)

63. As predicted, UMCO's longwall mining of Panel 5E damaged the portion of the 4E/5E Stream over Panel 5E and caused the stream segment to lose natural flow. (C.Ex. 19 (August 2004 reports), 20; U.S.Ex. AA.) UMCO carried out its commitment to maintain flow with city water, seal surface cracks with grout, and monitor the flow of the 4E/5E Stream above the 5E Panel. (S.T. 154; T. 313.)

64. Premining stream grouting was not successful in preventing stream damage and flow loss in the 4E/5E Stream above the 5E Panel. (T. 311; C.Ex. 19, 20.)

65. Almost all flow was lost at the southern edge of the 5E Panel (in the vicinity of a railway culvert) even though UMCO was adding up to 120 gpm of public water to the stream and UMCO had engaged in premining mitigation efforts. (S.T. 817; T. 50-51, 133; C.Ex. 19, 20.)

66. UMCO constructed a small dam and piping system in an effort to convey water through a railway culvert through which the stream formerly flowed in order to maintain flow in the downstream section of the 4E/5E Stream. (C.Ex. 19.)

The 6E Panel

67. The 4E/5E Stream flows perennially across the eastern end of the 6E Panel as the panel was originally depicted in UMCO's mining plan. The 6E Stream runs roughly west to east along the length of the panel. (S.T. 589, 892; C.Ex. 18.) There was a no subsidence zone for that portion of the 4E/5E Stream that is within the 6E Panel. In contrast, the 6E Stream was not designated with a "no subsidence zone." (S.T. 454, 463, 892.)

68. Cover in the 6E Panel where the 6E Stream is located ranges from 210 to 315 feet. (S.T. 683, 685-86, 812-13; C.Ex. 18; U.Ex. AA.)

69. Given the absence of a "no subsidence zone" designation, the permit did not restrict UMCO's ability to longwall mine beneath the 6E Stream as of August 200-. (T. 264, 316, 320.)

70. In order to avoid the no subsidence zone associated with 4E/5E Stream in the 6E Panel, UMCO modified its mine plan and shortened the 6E Panel to begin mining west of that zone. In other words, UMCO did not seek permission to longwall mine the portion of the 6E Panel beneath the lowest reaches of the 4E/5E Stream. (S.T. 454, 463, 489, 560, 892-93; T. 315.)

71. The Department told UMCO that it had continuing concern regarding mining of the 6E Panel. In response, UMCO submitted a request at a July 22, 2004 meeting with the Department to characterize the 6E Stream as ephemeral. (S.T. 168, 462-63; 839-40; T. 316-20; U.Ex. 76, 102.)

72. An intermittent stream flows off and on. An ephemeral stream has even less regular flow than an intermittent stream and only flows in direct response to precipitation events. Ephemeral streams typically do not have a well defined channels. (S.T. 167, 733; T. 276.)

73. UMCO submitted photographs to the Department in support of its claim that the 6E Stream was ephemeral. (T. 317.) The pictures showed that there was no flow in one previously disturbed section of the stream.

74. The Department rejected UMCO's claim that the 6E Stream was ephemeral. It decided that the 6E Stream was perennial, with the exception of the section depicted in UMCO's photographs. That particular segment appeared to have been previously affected by third-party construction activity. The Department requested that UMCO submit a

hydrologic study to predict the effects of mining on the 6E Stream. (S.T. 168, 462-63, 640, 758-60, 881-82, 897, 902; T. 319-20; U.S.Ex. Y; U.Ex. 102.)

75. UMCO did not argue with the Department regarding the perennial designation. (T. 318.) Instead, on or about October 18, 2004, UMCO submitted a hydrologic report for the 6E Panel prepared by Moody and Associates. (S.T. 486, 567-68; U.Ex. AA.)

76. UMCO's study stated that subsidence effects on hydrology in the 6E Panel would be similar to those experienced in the 4E and 5E Panels. (U.Ex. AA p. 10.) The study concluded that temporary flow loss could be expected, but there would be no permanent loss of values and uses. (S.T. 176, 203-04; U.S.Ex. AA.)

77. At the time it sought approval to mine 6E, UMCO's consultant reported that the 4E/5E Stream continued to experience a loss of flow across the panel. The consultant surmised that the water was flowing somewhere in the shallow subsurface. It predicted a similar result in the 6E Panel. (U.S.Ex. AA.)

78. UMCO committed to employ basically the same mitigation measures to the 6E Stream as it employed for the 4E/5E Stream. (T. 330, U.Ex. 11.)

79. The Department and UMCO had numerous meetings, telephone calls, correspondence, and other deliberations regarding the threat to the 6E Stream. (S.T. 452, 486, 562-63, 833, 881-85, 901-03; T. 314-20, 332-40.)

80. The Department concluded that longwalling would cause permanent, irreparable damage to the 6E Stream and the 6E hydrologic regime. (S.T. 817-21; T. 332-33; U.Ex. 120.)

81. The Department issued the order that is the subject of this appeal on November 12, 2004 (the "Order"). The Order modified UMCO's permit by prohibiting longwall mining in Panel 6E. Other methods of mining the panel are permitted. (UMCO Notice of Appeal Exhibit.)

82. UMCO would not have been able to satisfy preexisting contractual time commitments with coal extracted entirely from the High Quality Mine using only room-andpillar mining of the 6E Panel (i.e. mining with continuous miners). (T. 786, 800-01.)

83. UMCO's business and mining plans were based upon longwall mining, and it is safer and much more profitable to longwall the Pittsburgh Coal Seam at the High Quality Mine than it is to use other methods. (S.T. 110-13, 344; T. 324, 791-92.)

84. The Order did not prevent UMCO from longwall mining other panels at the site, and UMCO subsequently began mining Panel 9E. (T. 736-37, 785; U.Ex. 122.)

85. UMCO ceased mining of the 9E Panel when it encountered adverse geological conditions. (T. 738; C.Ex. 42-43.) In shutting down the entire mine, UMCO cited the geological conditions and its frustration in dealing with the Department. (T. 992; C.Ex. 42-43.)

86. Although it would not be a physical impossibility to overcome the adverse geological conditions (T. 794), it is questionable whether UMCO would reopen the High Quality Mine if it were allowed to longwall the 6E Panel. Overcoming the adverse geologic conditions could result in tremendous costs. (T. 739.) UMCO's mining engineer has never overcome such conditions to the degree discovered at the High Quality Mine. (T. 739.) UMCO's unwillingness to deal with the Department in obtaining approval to mine additional panels at the site has not subsided. (T. 789.) UMCO has permanently closed the nearby Maple Creek Mine, through which UMCO previously conveyed its High Quality Mine coal. Therefore, it would need to truck 12,000 tpd of material to its prep plant. (T. 809-10.) UMCO has removed almost all of its mining equipment from the High Quality Mine, ceased ventilating and pumping the mine, relocated its administrative functions, and erected mine seals. (T. 789-91, 808-09, 813.)

Additional Findings of Fact Regarding UMCO's Mining of Panels 3E through 5E

87. It is scientifically appropriate to consider the effect of mining on the 5E watershed as a predictor of what would happen to the 6E watershed if the 6E Panel were longwall mined because the surface and subsurface characteristics and features of the two contiguous watersheds are very similar. (S.T. 309, 316, 726, 808-09, 885, 917, 927; T. 147, 239, 1029; U.Ex. 120.)

88. UMCO and its consultant proposed the 4E/5E Stream as a comparison stream when making

predictions at the 6E Panel because the 4E/5E and 6E flows tended to mimic each other and the geology, hydrology, and biological characteristics of the streams and the areas of mining were about the same. (S.T. 157; U.S.Ex. AA.)

89. The 4E/5E Stream, like the 6E Stream, is an upland valley headwater stream fed by precipitation and shallow groundwater manifested as springs, seeps, and baseflow. (S.T. 808; T. 147, 885, 917.) From the Panel 4E segment downstream, the 4E/5E Stream is recharged by precipitation runoff and shallow groundwater from springs, seeps and baseflow emanating from perched aquifers. (S.T. 807-08; T. 140-41, 147, 160, 192-93, 885, 916-17, 1730-31, 1782; P.F.Ex. 19 p. 8-1.)

90. UMCO acknowledged in its submissions to the Department that the 4E/5E Stream was perennial prior to mining. (P.F.Ex. 19.)

91. The Department has required and continues to require significantly more premining hydrologic and biological stream data at other deep mines than it required from UMCO before allowing mining beneath the 4E/5E Stream. (S.T. 211-13; T. 1548-50, 1826-27.) The absence of sufficient baseline data will make it difficult to determine whether the 4E/5E Stream has ever fully recovered. (S.T. 172, 205-09, 215,224, 455, 941; T. 1340, 1380, 1451-52, 1549-54, 1561-62; P.F. Ex. 46.)

92. One premining flow monitoring result taken downstream of the confluence of the 6E and 4E/5E Streams but just upstream of the unnamed tributary's

confluence with the main branch of Maple Creek (Monitoring Point MC-3R-01) exhibited one flow rate of 3 gallons per minute ("gpm") premining. (T. 291-93, 390, 867-68; U.Ex. 132.)

93. Although this one datum is not particularly meaningful (S.T. 180; T. 150, 333, 910), it does suggest that there must have been dry sections somewhere in the watershed before mining. (T. 290, 867-69.)

94. The cause of the single, low-flow result is not known. (T. 83, 150-53, 292, 296-97.)

95. The result is not consistent with other sampling results, which otherwise range from 18.99 to 2,539.5 gpm at that location. (T. 149-50; U.Ex. 132.)

96. All of the springs and seeps overlying Panel 2E dried up following UMCO's mining. (S.T. 689.)

97. All of the springs and seeps overlying Panel 3E dried up immediately following UMCO's mining. (S.T. 689.)

98. With the possible exception of a spring that has some flow by the railroad culvert near the headwaters of the 6E Stream, all of the other numerous springs and seeps in the 4E and 5E Panels dried up immediately following UMCO's mining. Some of the springs/seeps have short periods of flow after heavy rain, but flow stops after three days or so. None of the springs/seeps in these panels have recovered as of the close of the record in this case. (S.T. 682-92, 724-35, 750-54, 806-07, 811, 818-20; T. 60-61, 64-68, 155, 161, 1835; C.S.Ex. 14, 18; C.Ex. 19.)

99. The springs have not returned despite periods of high precipitation. (S.T. 779, 811; T. 43, 115-18, 733-34, 812; C.S.Ex. 10; C.Ex. 25, 28; U.Ex. 9.)

100. The springs include springs on the 4E/5E gate roads, a spring known as the "horse spring" above the 4/5 gate entry, a spring in the 5E Panel near the railroad culvert, the Rakosky Spring on the 4E Panel, three springs on the Woodward property above the 4E Panel, a spring on the Witherspoon property over the 2E Panel, and a spring on the Coulter property over the 3E Panel. (S.T. 687-88, 751; T. 64-68; C.S.Ex. 14.)

101. UMCO's predictions that the springs, seeps, and streams overlying its former mining would fully recover and that they would do so in short order have not proven to be accurate. (T. 160-65; C.Ex. 31.)

102. The two small formerly intermittent tributaries over the 4E Panel flowing into the 4E/5E Stream now only flow ephemerally, which is to say after precipitation events only. (T. 62, 72; U.Ex. 9.)

103. UMCO's mining caused subsidence damage that dewatered the 4E/5E stream. (S.T. 218, 390, 402-03, 749-50, 768, 817; T. 50-51, 133; C.Ex. 19, 20.)

104. The 4E/5E Stream has not as yet recovered. Perennial flow has not as of the close of the record returned to the 4E/5E Stream. (S.T. 944-47, 988; T. 154-55, 162, 1114, 1323-24, 1534-35; C.Ex. 19-21, 41, P.F.S.Ex. G, H (See also S.T. 808-09).)

105. UMCO is required to maintain 25 gpm of flow at a downstream monitoring point on the 4E/5E Stream. (T. 1351-52, 1650, 1660.)

106. UMCO must discharge as much as 80 gpm of city water into the channel at the stream's former headwaters on a regular basis in order to obtain 25 gpm at the downstream monitoring point. (S.T. 405.)

107. UMCO pumped a total of 28,340,000 gallons of public water into the 4E/5E Stream between May 20, 2004 and September 16, 2005. (T. 57, 778; C.Ex. 20.)

108. There is currently insufficient data or research to assess the protracted, long-term impact of augmenting a stream with dechlorinated municipal drinking water. (S.T. 665, 1327-28, 1344-45, 1352, 1497-98, 1508.)

109. UMCO discontinued city water augmentation on September 8, 2004 because of heavy rainfall caused by the remnants of Hurricane Francis. Although 4.2 inches of rain fell on the area in a 24-hour period, the 4E/5E Stream was dry on the morning after. (S.T. 748-50, 768; C.S.Ex. 9; C.Ex. 20.) UMCO thereafter resumed city water augmentation. (S.T. 468; C.S.Ex. 9; C.Ex. 19-20.)

110. In January 2005, UMCO asked the Department if it could discontinue augmentation of the stream to demonstrate that the stream had recovered. (T. 45-46.)

111. The Department agreed to the demonstration. (T. 45-46.)

112. UMCO turned off the hydrant. It appeared for a time that there might be natural flow, but beginning in mid-April 2005, the 4E/5E Stream began to lose flow. (T. 49-50; C.Ex. 19 (April 1, 2005 – April 19, 2005), 20-21.)

113. By late April/early May 2005, portions of the 4E/5E Stream were barely flowing. (T. 131-36; C.Ex. 19 (April 27, 2005 – April 28, 2005), 20.)

114. Dry stream segments appeared by early May, and increased in length until May 16, 2005 when the entire stream over the 4E Panel and 5E Panel was dry except for a 90-foot segment on the southern part of Panel 4E and a few odd puddles. (S.T. 202, 749-50, 768; T. 51-54, 1341-43, 1350, 1653-59, 1670; C.S.Ex. 9; C.Ex. 19 (May 2, 2005 – May 17, 2005), 20-22-A, 23, 27; U.Ex. 220.)

115. The 4E/5E Stream went dry along virtually its entire length over the 4E Panel and 5E Panel in May 2005 despite higher than normal precipitation as evidenced by precipitation records and lush vegetation. This period is the only period of any length to date that the 4E/5E Stream was not continuously augmented, and the absence of significant natural flow during this period indicates that, so far, the stream is entirely dependent on augmentation. (T. 54-55, 118-19; C.Ex. 21, 23, 25, 27; P.F.S.Ex. G, H.)

116. The 6E Stream continued to flow during this period. (T. 50, 55, 112, 136-37; C.Ex. 2, 19, 20, 21E.)

117. Other similar streams in the vicinity of the mining (C.Ex. 26) continued to flow during the period

that the 4E/5E Stream dried up. (T. 55, 107, 135-36; C.Ex. 19-21, 23, 26-27.)

118. UMCO resumed public water augmentation of the 4E/5E Stream on May 18, 2005. (T. 46, 56; C.Ex. 19-20.)

119. Although surface cracks from subsidence that are not visible to the naked eye can drain a stream (T. 147), fractures were in fact visible in the 4E/5E Stream channel. (S.T. 697, 939; T. 160; C.S.Ex. 16.)

120. Headwater streams like the 4E/5E Stream naturally go dry in some sections from time to time. (T. 256, 1332-39, 1379, 1466-72, 1645; U.Ex. 280.)

121. A sewer line running parallel to the 4E/5E Stream predated UMCO's mining. (T. 299.) The sewer line was replaced or repaired in April 2005. The sewer line trench may or may not intercept some shallow groundwater or surface flow that might otherwise find its way into the 4E/5E Stream before and after mining. (T. 131, 296-99, 404, 408, 860-62, 899, 920.)

122. UMCO's "premining" biological survey of the 4E/5E Stream over the 4E Panel was actually conducted after mining of the 3E Panel. (T. 1552.)

123. UMCO's "premining" biological survey of the 4E/5E Stream over the 5E Panel actually occurred after the mining of 3E and 4E. (T. 1554.)

124. UMCO's biological surveys of the 4E/5E Stream have shown that the 4E/5E Stream channel, when filled with city water, is currently supporting a

warm water fishery. (T. 1321, 1412-13, 1489-97, 1505-07; U.Ex. 169, 171-73, 176-77.) Fish have been observed in the artificially maintained stream. (T. 1320, 1412, 1505.)

125. No meaningful conclusions can be drawn as yet from UMCO's biological data regarding the long-term ability of the 4E/5E Stream to support a warm water fishery because of (a) the dearth of premining data, (b) the lack of long-term data, and (c) UMCO's nearly constant augmentation. (T. 1317, 1342-43, 1502, 1516, 1549, 1561-62, 1564, 1569.)

126. Augmentation must be turned off for an extended period of time for the results to accurately reflect natural trends, and that has not occurred. (S.T. 947; T. 1560.)

127. Although UMCO's "premining" survey results must be qualified as not true background, they nevertheless show that the 4E/5E Stream supported a warm water fishery even after having suffered subsidence effects from upstream mining. (T. 1489-90, 1511.) This is consistent with the Department's biology expert's opinion, which we find credible, that the 4E/5E Stream was a perennial stream that supported a warm water fishery prior to mining. (T. 1316-17; U.Ex. 130.)

128. UMCO's expert hydrogeologist, Joseph Bonetti, did not dispute that UMCO's mining adversely affected the 4E/5E Stream. (T. 888.)

129. There is insufficient flow data to assess whether the 4E/5E has recovered at this time. (S.T. 945-46; P.F.S.Ex. G, H.)

130. Dr. Bonetti's opinion is based in part on UMCO's flow monitoring data (T. 1690-96, 1719-21), but those flow monitoring results contain many deficiencies, including failures to follow proper procedures and protocols, errors, anomalies and poor practices. The flow monitoring results are admissible, but they can be accorded little weight. The data are particularly suspect where they were obtained at sampling locations that had less than two inches of flow. (T. 484-90, 506, 528-89, 622-30, 632-41; C.Ex. 36-38; U.Ex. 17-18, 212.)

131. UMCO installed piezometers on the site. (C.Ex. 30; P.F. Ex. 66; U.Ex. 14 C, D.)

132. The piezometers were installed in an effort to measure the effects of mining on the *regional* groundwater table. (The deeper, more extensive regional groundwater table is to be distinguished from the *local* shallow perched aquifers and surface waters that are at issue in this appeal.) (S.T. 821-22; T. 139-43, 327-28, 454, 916-18.)

133. The piezometer data provides no meaningful information regarding the perched aquifers or the recovery of the shallow water systems at issue in this case. The regional groundwater table does not recharge the 4E/5E or 6E Streams. (S.T. 821-22; T. 140-43, 327-28, 454, 916-18, 1114, 1777.)

134. The piezometer data is essentially meaningless because it does not appear that the piezometers were properly installed, and there is insufficient data to allow for a meaningful interpretation of long-term trends or to distinguish between natural and mining-induced effects. (T. 893, 915, 1152, 1236, 1779-80.)

135. Accepting for purposes of discussion that the piezometer data is valid, the data does not reveal that deep groundwater is recovering at the 5E site as measured over the longterm. A plot of existing groundwater data after application of linear regression analysis shows that groundwater elevations in the PZ-1R, PZ-2 and PZ-3 piezometers were trending downward for the period January 2005 through August 2005. (T. 1776-77, 1794; P.F.Ex. 66.)

136. Dr. Bonetti's opinion that the piezometer data suggests that the groundwater system is recovering "as a whole" (T. 857-58, 917-22), coupled with his concession that the piezometer data has no connection to stream conditions (T. 917-18), negatively affects his credibility.

137. Dr. Bonetti's opinion that the 4E/5E Stream "is recovering and may be fully recovered" (T. 867-71) is not consistent with the evidence, is inconsistent with UMCO's expert biologist's opinion that it is too early to tell, and is otherwise not credible. (Finding of Fact ("FOF") 98-108, 125, 129-36.)

138. The long-term dewatering of the 4E/5E watershed provides compelling evidence that the 6E watershed will also be dewatered long term if UMCO

longwall mines underneath it. (S.T. 219, 808-09, 988; T. 147, 239, 929; FOF 87-137.)

The 6E Stream is a Perennial Stream

139. The 6E watershed is approximately 185 acres. (T. 106; C.Ex. 12.)

140. Of those 185 acres, 76 acres have already been longwall mined and 33 acres have been development mined. (S.T. 810-11; T. 106; C.Ex. 12, 18.) UMCO has already mined under approximately 58 percent of the 6E Stream's watershed. (T. 106.) In comparison, the 5E watershed is 118 acres, 75 percent of which was mined. (T. 107; C.Ex. 26.)

141. UMCO's mining to date has caused that headwater portion of the 6E Stream that is above the railway culvert to dry up much of the time. (S.T. 724, 766, 780; T. 59, 110-11; C.Ex. 12, 18.)

142. UMCO's mining in the 6E Stream's watershed has already diminished the flow of the 6E Stream. (T. 156-57.)

143. After the Department rejected UMCO's initial attempt to characterize the stream as ephemeral, UMCO agreed to treat the 6E Stream as a perennial stream. (T. 463; U.Ex. 119.)

144. The 6E Stream is designated on the USGS map and in Soil Conservation Service documents as an intermittent stream. (T. 318.) Designations on USGS topographic maps are usually not based on ground surveys and are not controlling in assessing whether

a stream is actually ephemeral, intermittent, or perennial. (S.T. 199, 955.)

145. There are 11 springs and seeps in the 6E Panel. (S.T. 185-87; T. 1729.) The springs are above the elevation of the 6E Stream and flow into the stream. (T. 1729-30.)

146. Some but not all of the springs and seeps that contribute part of the flow of the 6E Stream dry up seasonally. (S.T. 128, 130, 185-89, 196; T. 60, 400-01, 406, 923; C.Ex. 19; U.Ex. 142, 219.)

147. There are wetlands adjacent to the 6E Stream. (S.T. 129, 183, 371-72, 755; U.Ex. 102.)

148. The wetlands contain obligate plant species, which require hydric soils or standing water and are found in wetlands the vast majority of the time. (S.T. 647.)

149. The 6E Stream, springs, and wetlands have historically been used to water livestock, even through periods of drought. (S.T. 129-130, 188; T. 333.)

150. The 6E Stream has a well-defined channel about two to three feet wide and about one to three feet deep, which lays within a broader, shallower channel that is 20 to 30 feet wide. (S.T. 167; T. 1061; C.S.Ex. 17; U.Ex.142, 219.)

151. The appearance of the 6E Stream's channel is indicative of perennial flow. (S.T. 645-46; C.S.Ex. 17.)

152. The bed and substrate of the 6E Stream is indicative of perennial flow, as evidenced by erosion marks and characteristic deposition of gravel and silt. (S.T. 645-46; C.S.Ex. 17.)

153. There are fish in the 6E Stream, even during periods of drought. (T. 1331-32, 1412, 1414, 1504.)

154. The 6E Stream is supporting a warm water fishery. (T. 1414, 1500-06, 1509, 1528, 1531, 1558, 1561, 1569.)

155. The Department has observed long-lived macroinvertebrates in the 6E Stream that require flow in the stream for two to three years in order to go through their observed life cycle. There are also fish of different year-groups. (S.T. 645-46, 658, 661.)

156. The 6E Stream supports a benthic macroinvertebrate community which is composed of two or more recognizable taxonomic groups of organisms which are large enough to be seen by the unaided eye and can be retained by U.S. Standard No. 30 sieve and live part of their life cycles within or upon available substrates in a body of water or other water transport system. (S.T. 640-41; T. 1516.)

157. The fact that the 6E Stream supports a diverse and long-lived benthic community is scientifically appropriate evidence that water flows continuously in the stream and the stream is perennial. (T. 1516.)

158. Portions of the 6E Stream in fact flow continuously throughout the calendar year, even during periods of drought. (S.T. 128, 130, 803; T. 156-

57, 400-01, 407, 766, 1331, 1340, 1409, 1503; C.S.Ex. 17; U.Ex. 102, 142, 219.)

159. There is a man-made disturbance near the downstream end of the 6E Stream. The disturbed section is approximately 200 to 300 feet long. The disturbance was probably associated with the installation of a municipal sewer line. (S.T. 171, 173, 230, 514, 648-49, 657, 758; T. 357; U.Ex. 14-CC.)

160. The disturbed section of the streambed goes dry. Except during periods of high flow, some or all water flowing down the stream channel goes underground at the point of the disturbance. It is not known where the water resurfaces. (S.T. 150, 166-67, 758, 770, 775-76, 948; T. 73-74, 90, 93; U.Ex. 14-CC, 76, 142, 157, 215, 219.)

161. In addition to the disturbed area, other portions of the 6E Stream have gone dry during periods of drought (S.T. 128, 131, 136; T. 62, 92-93, 1331, 1340, 1409), but the entire stream has not been seen to go dry even in periods of drought (FOF 146, 158).

162. Up to the point of the man-made disturbance, the 6E Stream loses some flow through its porous channel to the subsurface, but it usually picks up more flow from the perched aquifer than it loses back to the ground, which makes it a net gaining stream. (T. 246-47, 299, 846.)

163. The Department's well-qualified biologist's credible expert opinion is that the 6E Stream is

perennial. (S.T. 640.) UMCO offered no contradictory expert opinion.

164. The 6E Stream is a perennial stream. (FOF 146-163.)

The Height of the Coal Seam

165. The height of the Pittsburgh Coal Seam in the 6E Panel ranges from approximately seven to ten feet. (S.T. 74, 295; T. 1010, 1242, 1803; P.F.Ex. 65; U.S.Ex. AA.)

166. Some UMCO witnesses stated that UMCO might mine only six or seven feet of the coal at some or all points on the panel. (S.T. 297, 367, 424; T. 1024, 1242; U.Ex.14L, 14M, 14P, 14R.) That supposition is not grounded on anything in any permit, order, regulation, or other enforceable document. The six-foot mining assumption is not included in UMCO's stream mitigation measures, and there is no binding or enforceable limitation on the height of UMCO's mining. (S.T. 823-24; T. 1107, 1831.) The only actual limitation on the height of the mining is the height of the coal seam. (T. 1831.)

167. UMCO's proposal at the hearing to mine only six feet of coal is not consistent with its past mining practices or future plan or industry longwalling practice, it is not reflected in any reserve estimates, and it has not been shown to be enforceable as a practical matter. (S.T. 307.)

168. The opinion of UMCO's subsidence expert, Robert Bruhn, regarding the extent and reach of

anticipated subsidence effects above the 6E Panel was based in part on an inaccurate assumption that only six or seven feet of coal would be mined throughout the panel. (U.Ex. 14L, 14M, 14-O, 14R.)

Hydrogeology of the 6E Panel

169. The 6E system is known as an upland valley hydrologic regime. (T. 141; C.Ex. 29.)

170. The 6E Stream, springs, seeps, and wetlands are all surface manifestations of perched aquifers, i.e. shallow groundwater and some precipitation runoff. (S.T. 321, 803; T. 140-42, 168, 189, 234-37, 242-43, 454, 843, 873, 885, 916, 925, 1095, 1216-18, 1730-31, 1758, 1769, 1829; U.S.Ex. AA; U.Ex. 120.)

171. Rainwater and shallow groundwater in 6E percolates downward in the 6E Stream's watershed until it encounters a zone of relatively reduced permeability known as an aquitard or a confining layer. (T. 141, 234-37, 242, 842-43, 872-73, 916, 925, 1095, 1216, 1730-31.)

172. Some of the groundwater encountering an aquitard then moves laterally. If the groundwater intercepts the ground surface, it is manifested as a spring, seep, wetland, or stream baseflow. It is all the same system, part of which is underground and part of which is above the surface. This is the basic hydrologic cycle or hydrologic balance at issue in this case. (T. 187-88, 841.)

173. Some water also moves laterally through the soil horizon. (T. 141.)

174. The movement of water in the 6E Panel tends to be through soils, the soil/rock interface, and secondary fractures in the rock strata, not through pores in the rock itself. (T. 183, 842, 1217.)

175. The secondary fractures, and therefore the direction of shallow groundwater flow, tend to mimic topography. (T. 183, 848; C.S.Ex. 13 (illustration).)

176. The larger regional groundwater system does not contribute recharge to the perched 6E system. The regional water table is significantly below the shallow 6E system that is at issue in this case. (T. 142-43, 285, 335, 846, 915-17, 1769; C.S. Ex. 13; U.Ex. 120.)

177. In evaluating and predicting the potential effects of subsidence on the 6E upland valley hydrologic regime, there is no reason to distinguish what percentage of the flow in the 6E Stream channel comes from springs, seeps, or wetlands, where water happens to flow over the surface immediately before entering the stream, and groundwater that happens to flow directly into the stream itself through the bottom and sides of the stream channel (i.e. baseflow). (S.T. 823, 830; T. 873, 916.)

178. There is no scientific or other reason to differentiate the relative contribution of surface and subsurface water flowing into the 6E Stream because it is the impact of mining on the perched system as a whole that matters. (T. 235, 873, 916, 1782-83.)

179. UMCO's consultant reported that "[t]he base flow for the unnamed tributary of the 6 East panel is derived primarily from the upland local shallow

perched groundwater flow system. This is supported by the number of springs and wet areas observed above the stream valley that contribute flow to the stream." (U.S.Ex. AA.)

180. In the 6E hydrologic regime, it is the effect of the mining subsidence on the aquitards that has the most significance because it is those aquitards that are responsible for the formation and continuation of the perched groundwater system. (T. 1731; U.Ex. 120.)

181. The continuing existence and vitality of the 6E Stream depends upon the integrity of the aquifer and the shallow groundwater system as a whole, not the ability of the stream channel to function as a ditch capable of transporting water across the ground. (T. 1783; U.Ex. 120.)

Subsidence Generally

182. The 6E Panel is approximately 775 feet by 2730 feet. (T. 1010.)

183. Longwalling on the 6E Panel would have proceeded from east to west. (T. 731, 1010.)

184. As a longwall machine cuts into a panel, the lithologies and soils above the coal subside. This process begins at the start gate and moves through the entire panel. (S.T. 374, 921; T. 1205-07, 1752; U.S.Ex. DD.)

185. In longwall mining, the roof above the coal seam collapses and subsidence occurs almost immediately. (S.T. 926.)

186. The void spaces in the rubbleized zone at and above the former coal seam gradually fill in to some extent as the material settles in a longwall mine. (T. 1047, 1050, 1113.)

187. This settling can result in some residual subsidence, but most of the subsidence that results from longwall mining tends to occur immediately. (S.T. 926; T. 1033.)

188. Longwall mining does not typically create a big, lingering, open sink as opined by UMCO's subsidence expert, Robert Bruhn. (T. 1772.)

189. Bruhn relied upon a photograph of room-and-pillar mining in expressing his opinion regarding the "mine void" caused by the longwall mining proposed for the 6E Panel. (T. 1032, 1112, 1771; U.Ex. 14Q.)

190. Mining 7 feet of coal in the 6E Panel would result in as much as four feet of subsidence at the surface. (U.S.Ex. AA; U.Ex. 14L, 14R.)

191. The elevation and configuration of the 6E Stream would have changed and dropped several feet. (P.F.S.Ex. C, D; U.Ex. 14P.)

192. Subsidence caused by mining creates new cracks or fractures and opens up or exacerbates existing natural fractures. These fractures and cracks are the primary pathways for intercepting water and increasing vertical permeability, which can in turn result in the loss or diminution of surface waters features and/or groundwater at certain stratigraphic levels. (T. 182-83, 1751, 1768-69, 1784.)

193. In general, the greater the overburden thickness and percentage of soft rocks in the overburden sequence, the less the predicted adverse impacts from longwall mining. (U.S.Ex. AA.)

194. The overburden thickness (cover) on the 6E Panel ranges from approximately 210 feet in the east to as much as 450 feet in portions of the west. Cover under the stream ranges from 210 to 315 feet. (S.T. 296, 683-85, 812-13, 957; T. 1010; C.Ex. 18; U.S.Ex. AA.)

195. The 6E Panel is considered a very low cover mine. Anything less than 400 feet of cover is cause for heightened concern regarding subsidence damage. (S.T. 681, 803, 812-13, 820-21; T. 1592, 1629.)

196. There has been no known longwalling beneath streams in western Pennsylvania with cover as shallow as the High Quality Mine, and very little in the United States documenting the effects of such shallow longwall mining using modern methods. (U.Ex. 9.)

197. When attempting to predict the surface effects of subsidence, it is important to look at site-specific information, including but not limited to the subsidence effects of mining previous panels at the site. (T. 1762-63.)

198. UMCO's subsidence expert, Mr. Bruhn, did not consider any information regarding the 4E/5E Panels and the 4E/5E Stream in making his predictions regarding the 6E Panel and the 6E Stream. (T. 1059-60.)

199. The presence of preexisting natural fracturing increases the potential that there will be adverse subsidence effects to surface waters. (T. 1173-74.)

200. Drilling logs for boreholes installed in 6E show preexisting, open fractures in the lithologies above the coal seam. Although some of the fractures may have been caused by the drilling itself, some of the fractures were observed to be "weathered," which indicates a longterm preexisting condition. (T. 1007, 1140, 1173-74, 1749-51, 1791; U.S.Ex. AA Appendix B; U.Ex. 191.)

Subsidence Viewed Vertically

201. Subsidence effects may be thought of conceptually in two ways: vertically, i.e. slicing through the strata; and aerially, i.e. from a bird's eye view. As to subsidence viewed vertically, two types of subsidence cracks are relevant: (1) surface cracks and (2) subsurface cracks propagating up from the depth of the mined-out coal seam. (T. 108-09, 144, 375-78, 1121, 1751-52, 1764-67.)

Surface Cracks

202. Surface cracks from mine subsidence are relevant because they may divert both surface water and groundwater that feeds the 6E Stream. (T. 143-44, 377-78, 1766-67.)

203. Surface cracks are of concern not only in the stream channel itself but in any areas that contribute to the flow in the stream as well because the cracks tend to rob flow from the stream. (S.T. 956-57.)

204. Very small cracks can completely drain a stream. (S.T. 697, 939; T. 147.)

205. Fracturing in the so-called surface fracture zone will occur throughout the entire 6E Panel. (S.T. 923, 934-35; T. 238, 1114, 1121, 1751-52.)

206. Surface fractures have varying depths, but the surface fracture zone tends to extend down about 50 feet, which is deep enough to disrupt the shallow groundwater that feeds the 6E Stream. (T. 108-09, 144, 238, 1130.)

207. The surface fracture zone is generally independent of the depth of cover. (T. 377-78; U.Ex. 14-O.)

208. Surface cracks on the 6E panel would likely have dewatered the 6E Stream and the other surface water features. (U.S.Ex. AA.)

Subsurface Cracks

209. In predicting how far subsurface cracks will propagate up from the mining, it is important to consider the height of the seam to be mined, known as "t." That depth relative to the amount of overburden cover over the mine is a key factor in predicting whether adverse subsidence effects will manifest on the surface or at key stratigraphic levels within the cover. (T. 178-79.)

210. Experts multiply "t" by a theoretical number to calculate the risk. Subsidence is based on numerous variables, so there is no brightline number that can be

guaranteed to accurately predict the actual vertical propagation of the subsurface cracks, but the range is 24t to 60t. (T. 232, 1761-62; U.S.Ex. AA.)

211. The Department uses 45t as a benchmark. Any mine where 45t intercepts the horizons of concern is not necessarily prohibited, but it is cause for heightened scrutiny. (S.T. 805; T. 231-32.) The 6E Panel qualified for heightened scrutiny under this standard, even assuming as little as six feet of coal would be mined. ($45 \times 6 = 270 > 210$.)

212. Francis S. Kendorsky did not testify, but his work regarding subsidence fracturing is generally accepted and was discussed by all the subsidence experts in this case. Kendorsky has devised a conceptual construct of how far up subsurface cracks can be expected to propagate. (T. 232, 1026, 1123; C.Ex. 40; U.Ex. 23.)

213. Kendorsky worked at one time for John Morgan, PennFuture's expert. Morgan has worked closely with Kendorsky and has consulted Kendorsky in connection with rendering his opinions in this case. (T. 1759-64.)

214. Kendorsky's construct was primarily designed to assess the safety of mining under the ocean. (T. 1761; C.Ex. 40; U.Ex. 23.)

215. Kendorsky's work was not intended as a precise predictive model. It is conceptual in nature. (T. 1122, 1760-62; C.Ex. 40; U.Ex. 23.)

216. Kendorsky postulates the following four zones going from the bottom up:

Zone	Description	Height above coal seam
Caved Zone	Rock rubbleizes and comes to rest on mine floor	6t
Fracture Zone	Height of fracturing	6t – 30t
Middle Zone: 2 subzones: 1) Zone of dilation	Increase in porosity of rock but no increase in throughgoing fractures	remainder
2) Zone of continuous deformation	Some deformation but no fractures	remainder
Surface Zone		50 feet or so down from the surface

(T. 1022, 1212-15; C.Ex. 40; U.Ex. 23.)

217. The absence of fractures in the "zone of continuous deformation" means that, all other things being equal, the zone can theoretically serve as an intact aquitard arresting further downward migration of groundwater found above it into the mine workings. (T. 1027-28, 1147.)

218. In applying Kendorsky's work, Bruhn incorrectly concluded that the fracture zone extends up from the top of the coal seam (T. 1022-26, 1145), when in fact Kendorsky intended the fracture zone to start at the cave zone. In other words, the fracture zone is 24t, but that 24t must be added on to the 6t cave zone to determine the conceptual vertical reach of the subsurface cracking. (T. 1759-65, 1794; C.Ex. 40; U.Ex. 23.) UMCO itself has referred to 30t as the appropriate number in its submissions. (C.Ex. 31.)

219. Assuming the Pittsburgh Coal Seam is 6'10" at the east end of the 6E Panel and cover is 210 feet, Kendorsky's postulated fracture zone will extend to within five feet of the surface. (6.833 x 30t). Because the surface zone extends down 50 feet, anywhere that cover is less than 260 feet is problematic. (T. 1767-68.)

220. Even if Bruhn's use of 24t instead of 30t was appropriate, Kendorsky's theoretical middle zone would be four feet thick. (6.833 x 24t)/(210–50).

221. Bruhn's speculation that a middle zone of as little as one foot could stop the downward migration of water over the entire panel is not credible. (T. 1145-46, 1760.)

222. In order to function as an aquitard, the postulated middle zone would ideally be composed of shale or be otherwise conducive to impeding flow under natural conditions (T. 1213-14), but there is no evidence that the rock strata found at Bruhn's postulated middle zone on the 6E Panel is of a type that would be conducive to acting as an aquitard. (P.F.Ex. 65.)

223. The subsurface fractures propagating up from the coal seam and the surface fractures propagating down from the surface will both intersect and compromise the strata serving as aquitards supporting the perched aquifer system manifesting itself as the stream, springs, and wetlands on the 6E Panel, thereby resulting in the elimination of flow to the 6E Stream. (S.T. 804-817; T. 844; C.S.Ex. 13 (illustration); P.F.Ex. 65; U.Ex. 120; U.S.Ex. AA.)

224. There is unlikely to be any single fracture that extends all the way from the coal seam to the surface, but such throughgoing fractures are rare and their absence is largely irrelevant in this case. (T. 144, 1768-69.)

225. UMCO's piezometer data provides no legitimate support for the theory (T. 1030) that there would be a middle zone on the 6E Panel. (T. 1152.)

226. UMCO's expert damaged his credibility by opining that recovering water levels, static water levels, and water levels decreasing in the piezometers could all be evidence of a functioning middle zone. (T. 1153.)

227. UMCO's longwall mining of the 6E Panel would have caused extensive fracturing of the aquitards that support the upland valley hydrologic regime. (T. 844, 1770.)

228. UMCO's longwall mining in the 6E Panel would have intercepted the shallow groundwater flow system. (S.T. 804-17, 958; T. 231, 233, 1770; C.S.Ex. 13 (illustration); P.F.Ex. 65; U.S.Ex. AA; U.Ex. 11.)

229. The fracturing of the aquitards would have compromised the entire perched system, which in combination with surface fracturing would to a reasonably degree of scientific certainty have eliminated all or nearly all of the remaining surface component of the system; to wit, the springs, seeps, wetlands, and the 6E Stream itself. In other words, longwall mining of the 6E Panel would dewater the 6E Stream. (S.T. 804-818; T. 441-42, 1770; U.Ex. 120.)

230. Instead of flowing outward to create and support surface water features, the groundwater in the 6E panel would percolate downward after mining. It is not known and it does not matter exactly where it would emerge beyond the known fact that it will emerge too low to contribute to the shallow flow system. It may or may not infiltrate into the mine workings. (S.T. 804-817; T. 357, 369-70, 392-93; C.S.Ex. 13 (illustration); U.S.Ex. AA; U.Ex. 120.)

231. The water that is lost from the shallow groundwater regime does not disappear; it simply flows deeper and possibly emerges at some unknown point downdip or downgradient, in this case somewhere in the Maple Creek and/or Pigeon Creek watersheds. (T. 233, 244, 290; U.Ex. 120.)

Subsidence From a Bird's-Eye View

Temporary Zones

232. It is also possible to conceptualize subsidence from an aerial perspective. As longwalling progresses across a panel, the waive of subsidence creates a

temporary tensional zone where cracks are opened up. (S.T. 923; T. 378, 1204-06, 1752.)

233. As longwalling passes, there is a temporary compressional zone where the cracks close up. (S.T. 930-35; 1204, 1752.)

234. The temporary deflection or inflection point--the border between the temporary tensional and temporary compressional zones--moves through the panel along with the longwall machine. (T. 1205.)

235. The warping of the ground surface caused by the subsidence creates a saucer-like depression. (T. 1011-13.)

Permanent Zones

236. After the initial subsidence wave passes, the panel settles into its final state ground strain condition. This includes a tension zone, where the earth is pulled apart, a compression zone where the earth is pushed together, and a neutral zone where there is neither long-term compression nor tension. (S.T. 928; T. 1016-17, 1751-53.)

237. After mining, the middle of the panel, or saucer, constitutes the permanent neutral zone. The temporary cracks opened, then closed, then tension is relieved. The cracks do not go away, but there are neither long-term compressional nor tensional stresses. (T. 325, 1122, 1752-53.)

238. As one moves outward from the middle of the panel, mining results in a permanent compression

zone, in which the temporary cracks tend to be forced together. (T. 325, 1752.)

239. Moving still further outward around the edge of the saucer, mining creates a permanent tension zone, where the difference between the subsided area and the nonsubsided area creates an area where cracks are pulled apart and tend to remain open for the long term. (S.T. 924; T. 189, 238, 1128-29, 1753.)

240. The permanent inflection point, or the point of the "edge effect," is the border between the permanent compression and permanent tension zones. (T. 1015, 1740.)

241. The permanent tension zone can affect both surface and subsurface cracks. (T. 1128-29.)

242. Once formed, subsidence cracks do not disappear. The difference between the zones is the extent to which the cracks remain open over the long term. Open cracks are the most problematic. (T. 325, 1129.)

243. The permanent tension zone is of the most concern in predicting long-term subsidence effects because ground forces tend to keep the cracks caused by subsidence open, which creates a conduit for water to move downward rather than laterally toward the surface water features. (S.T. 930-32; T. 189-90, 238, 1021, 1044, 1129, 1199.)

244. Although there are many factors at play, all other things being equal, surface water features in the permanent compression zone and neutral zone tend to

suffer less long-term damage than surface water features located above the permanent tension zone. (T. 189-90, 325, 1043-44.)

245. The more area of a stream or other surface water feature that overlies the permanent tension zone, the greater the risk of severe and/or long-term surface flow loss. (U.S.Ex. AA.)

246. As the height of cover increases, the horizontal extent of the permanent tensional zone increases. (T. 1134, 1137, 1741-45; P.F.Ex. 62.)

247. In order to calculate the point of the edge effect, i.e. the aerial extent of the permanent tension zone, it is critically important to know the vertical location of the coal seam, factoring in its dip relative to the topography of the surface in order to calculate overburden thickness. (T. 1740.)

248. The coal seam on the 6E Panel dips 1.9 percent from east to west. (T. 731, 1743.)

249. The angle of draw is the angle coming out from a vertical line extending up toward the surface from the coal panel. (T. 1132-34, 1739.)

250. The experts in this case assumed that there would be a 23 degree angle of draw. (T. 1134, 1740.)

251. Using .25h, with "h" being the height of the overburden, combined with the assumed 23 degree angle of draw, PennFuture's expert accounted for actual site conditions and credibly predicted the scope

of the permanent tension zone that would occur at the 6E Site. (T. 1740-44; P.F.Ex. 62.)

252. As a result of the dipping coal seam and topography, there is a larger predicted permanent tensional zone on the west end of the 6E Panel than east end. (T. 1137, 1743; P.F.Ex. 62.)

253. A substantial percentage of the perched aquifer, the 6E Stream itself, and the other surface manifestations of shallow groundwater flow in the 6E Panel are in the predicted permanent tension zone. (S.T. 932, 935; T. 238-39, 1045, 1744; P.F.S.Ex. B; P.F.Ex. 62-63; U.Ex. 14K, 14M.)

254. The percentage of the 6E Stream that is in the predicted permanent tension zone is higher than the percentage of the 4E/5E Stream that was in that zone. (S.T. 932-34.)

255. The fact that a significant portion of the shallow groundwater and surface water system overlies the predicted permanent tension zone is a strong indicator that the adverse subsidence impacts to that system will be severe and long-term. (T. 189-90, 238.)

256. The permanent tension zones for two adjacent panels may overlap, such as the zones for the 5E and 6E Panels, which can result in proportionately greater long-term subsidence damage in that area. (T. 1747-48.)

257. UMCO's subsidence expert did not account for the overlapping permanent tension zones of the 5E

and 6E Panels in rendering his opinions. (T. 1106, 1747-48.)

258. Bruhn's opinion regarding the aerial extent of the permanent tension zone was largely based upon typical, generic average and default values which did little to account for specific conditions at the 6E site. (T. 1093-1106, 1134, 1175, 1230-40, 1744-45; P.F.Ex. 62-63.)

259. Whether one considers subsidence effects vertically through the strata (FOF 201-231) or from a bird's-eye view (FOF 232-258), there is a very strong likelihood that subsidence fractures resulting from UMCO's longwall mining of Panel 6E would completely and permanently eliminate flow in the 6E shallow groundwater/surface water system including the 6E Stream.

Other Factors Regarding the Threat to the 6E Hydrological Regime

260. Hard rock fractures more easily than soft rock. (T. 185.)

261. Soft rock tends to have smaller cracks dispersed throughout the unit rather than the larger open cracks that tend to form in hard rock. (T. 911, 1063.)

262. All other things being equal, fractures in hard rock are more likely to remain open than fractures in soft rock. (T. 845-47, 911, 925, 1801.)

263. The more hard rock in the cover, the more likely that adverse subsidence effects will be severe and last a long time. (T. 1759; U.S.Ex. AA.)

264. There is a significant amount of hard rock in the strata below the elevation of the springs (≈ 1040 msl) and above the coal seam on 6E, which is another indication that the adverse subsidence effects of longwall mining in that panel would have been severe and long term. (S.T. 957; T. 383, 1119-20, 1755-59; P.F.Ex. 64; U.S.Ex. AA.)

265. There is a greater percentage of hard rock overlying the 6E Panel than there is in the 5E Panel. (U.S.Ex. AA.)

266. UMCO's consultant reported that the overburden type present in 6E is considered "less than favorable to reduce the potential for a lowering of the ground water table that contributes to stream flow over the 6E panel." (U.S.Ex. AA.)

267. As a general rule, the larger the watershed, the more water is available for recharge. At 185 acres, the 6E watershed is relatively small. (S.T. 810-11; T. 99-100, 108.)

268. As a general rule, the higher the percentage of a watershed that is mined, the greater the likelihood that mining will upset the hydrologic balance and damage the stream in the watershed. (S.T. 810; T. 109; U.S.Ex. AA.)

269. If the 6E Panel is mined, all but a small remnant of the 6E watershed will have been

undermined. (S.T. 810-11; T. 109; C.S.Ex. 12; C.Ex. 18.)

270. All other things being equal, a stream that runs along the length of a longwall panel is more prone to adverse effects than a stream that crosses perpendicularly to a panel. (T. 1210-11.)

271. The 4E/5E Stream crossed perpendicularly; most of the length of the 6E Stream runs parallel to the 6E Panel. (C.Ex. 12; U.Ex. 14E.)

272. In general, the more times a stream is undermined, the greater the overall cumulative impact will be to the stream. (U.S.Ex. AA.) Longwall mining the 6E panel would have been the third pass because the stream originates in the 4E panel. (C.S.Ex. 12.)

273. There is an average of approximately 5.75 feet of soils on the 6E site. (T. 1051, 1096; U.Ex. 14T.)

274. Mine subsidence is not expected to change the characteristics of the soil. (T. 891, 1164-65.)

275. There are a significant amount of clays in the soils on the 6E Panel. Clays have relatively low permeability. (T. 853, 942, 944, 1053; U.Ex. 9, 14B, 14T.)

276. There are also a fair amount of sands and gravels, which have high permeability. (T. 1227.)

277. Clays would be helpful in resisting initial surface damage and be conducive to repairing surface

cracks through erosion and deposition. (T. 325-26, 853, 944, 1053-59, 1200.)

278. Some of the baseflow to the 6E Stream flows through the soils. (T. 1168.)

279. Soils are roughly analogous to rocks in that there are areas, such as sandy areas, where there is more flow, and other areas, such as clayey areas, where there is less water flow. (T. 1168, 1228.)

280. It is the layers or zones of permeable material in the soil horizons that allow for more baseflow to the stream. (T. 1228.)

281. The 6E Stream channel and watershed contain areas of clay, but also sandy areas and rocky areas. (T. 927, 1228.)

282. The 6E Stream's use as a warm water fishery is vulnerable to being lost because the stream has already been stressed by flowing through an open field that is used for agricultural purposes and the stream has suffered damage from preexisting construction activity. (S.T. 648; T. 1503, 1561.)

283. The 6E Stream is more susceptible to damage and less likely to recover than the 4E/5E Stream. If the 4E/5E Stream eventually recovers, it does not follow that the 6E Stream, if lost, would also recover because (a) a higher percentage of the 6E watershed would have been mined, (b) the 6E Stream is already stressed, (c) the 6E Stream has less flow, (d) the area of the 6E Stream has less cover, (e) more of the 6E Stream is above permanent tensional zones, (f) most of

the 6E Stream runs parallel to the panel, (g) there is more hard rock in the pertinent lithologies in 6E, and (h) the 6E watershed would have been mined repeatedly on separate passes. (T. 236-37; FOF 17-18, 68, 139-40, 211, 219, 256-57, 265, 267-72, 282.)

Recovery of the System

284. There is no dispute among *all* of the experts that longwall mining the 6E Panel would have disrupted flow in the 6E Stream, springs, seeps, and wetlands. (Compare T. 843-44, 872, 1011, 1768; U.Ex. 120.) The difference in expert opinion is whether and when the system would have recovered, i.e. when natural flow would return to levels sufficient to restore premining values and uses.

285. Although UMCO's experts opined that the 6E Stream will eventually recover, they were unwilling to predict when that recovery would take place. They did not adopt the conclusion of UMCO's prior consultant that recovery would occur in a matter of weeks. (T. 914, 1109.)

286. UMCO's hydrogeologist conceded that many variables contribute to how soon a hydrologic regime will recover, many factors are unknown and unknowable, and it is impossible to predict when the 6E Stream will recover. (T. 914.)

287. UMCO's hydrogeologist concedes that it is possible that the 6E Stream will never recover. (T. 914.)

288. As a general rule, the same factors that affect whether there will be subsidence damage in the first place also control whether the subsidence damage will last a long time. (*See*, e.g., FOF 263, 264.)

289. Some streams that suffer from the adverse effects of mine subsidence do recover postmining on their own. (S.T. 722; T. 85, 302, 874, 990-91, 1647-48; U.Ex. 196-97.)

290. Streams that recover typically intercept a larger water table, have larger watersheds, and overlay mines with deeper cover than 6E. (U.Ex. 120.)

291. Recovery of shallow systems is more likely in deep cover mines because subsurface fractures will not propagate upward far enough to damage the critical aquitards that support the systems. (U.Ex. 120.)

292. The High Quality Mine is unique because there are no other mines in Pennsylvania where an operator has attempted to longwall coal using modern methods with such shallow cover. Therefore, drawing comparisons with other streams that may have recovered at other Pennsylvania longwall mines has little predictive value. (S.T. 681-85.)

293. For example, streams at the Eighty-Four Mine have recovered, but they were bigger streams and there was twice the amount of cover. (T. 443.)

294. The Department permitted another operator, RAG, to mine under a stream that it had already damaged because that mine had deeper cover, and it was a bigger, second-order stream than the 6E Stream.

That stream has not recovered. (T. 304, 380-81, 1609-10, 1830.)

295. When longwalling at a Consol mine created unanticipated heaving in a stream channel, Consol was required to show that future panels would not cause harm. The Consol mine did not have the unique problematic characteristics of UMCO's High Quality Mine. (T. 1824-27.)

296. UMCO's hydrogeologist is not aware of any other case where a stream similar to the 6E Stream has recovered after having been dewatered by mining. (T. 914.)

297. Bruhn pointed to two streams in West Virginia that still flow after being undermined by shallow cover mines, but the characteristics of those streams make them very different from the 6E Stream and they have no predictive value in this case. (T. 1073-84, 1154-64; C.Ex. 45, 47.)

298. No testifying expert was aware of any successful operator-assisted stream flow restoration to date. (T. 302.) Operator efforts to restore lost natural flow at other mines have not been shown to be successful. (T. 380-81, 1830.)

299. Kernic has never seen a stream like the 6E Stream heal once it has been taken by subsidence. (T. 1828; U.Ex. 120.)

300. To some extent, some surface cracks can fill in over time through erosion and deposition of sediment. (T. 847, 1176-77, 1200.)

301. Erosion and deposition of sediment does little to help repair subsurface cracks. (T. 911, 1200-01.)

302. *Surface* cracks may fill up over time. *Subsurface* cracks, particularly in a permanent tensional zone, are less likely to close up over time. In other words, surface cracks apparent in the 6E Stream channel may clog with sediment in time, but no such mechanism operates underground. (T. 912, 1176-77, 1199-1200, 1828-29, 1831.)

303. There is no credible evidence to support UMCO's experts' opinions (T. 845, 872, 1732) that the cracks in the 6E aquitards will "heal." (T. 911, 1176-78.)

304. UMCO's hydrogeologist testified that he "can't really explain" the mechanism for healing. It is "just his understanding that is what happens with soft rocks." (T. 911.)

305. Underground fracturing caused by mine subsidence and the mine workings themselves create increased storage space for groundwater. As that storage space fills up again with groundwater after mining passes through the area, the deep water table may tend to rebound. (T. 1066-67.) The rise in water table does not indicate that the cracks have disappeared or closed up. (T. 145, 397.)

306. By definition, this recovery effect is less likely to occur in a formerly perched system that has been compromised. The cracks cannot fill up with groundwater because the system is perched in isolation above the water table. Water will simply

continue to percolate through the damaged aquitard. (T. 145-47, 1828-29.)

307. The settling and concomitant reduction of void spaces that occurs after the longwalling passes may assist somewhat in the recovery of the regional groundwater table, but it will not contribute materially to a recovery of a very shallow perched aquifer such as the 6E system, which is located well above and separate from the water table. (T. 1114.)

308. Assuming for discussion purposes that there has been a rise in the regional water table in the area of 4E/5E system, that observation provides no meaningful information regarding the future of the 4E/5E Stream. It does not suggest that underground cracks have "healed" or ever will "heal." (T. 145-47.) It could actually indicate that the *shallow* system has not recovered and more groundwater is available for deep recharge. (T. 1780.)

309. The opinions of the Department and PennFuture's experts that the 6E hydrologic balance will not be restored at any time in the foreseeable future are credible. (FOF 100, 104, 283, 288.)

310. There would be no foreseeable recovery from the damage to the 6E shallow hydrologic regime including the stream following longwall mining. The loss of the stream and its appurtenant surface water features will be severe and permanent, in the sense that it will be very long term as measured in human terms. (S.T. 818, 820; T. 154-55, 178-79, 223, 239-40, 334-35, 381, 396, 1782, 1828; U.Ex. 120.)

Mitigation Plan

311. UMCO has committed to take several mitigation measures when the predicted damage to the 6E Stream is realized, including such measures as sealing cracks with bentonite, replacing lost flow in the stream channel with public water, and supplying a bond in an amount adequate to cover short-term costs of mitigation. (S.T. 410, 862, 867; T. 778-80, 1069-70; U.S.Ex. AA.)

312. The Department believes that UMCO's mitigation plan contains the measures that are currently available for repairing unexpected stream damage. (S.T. 828-29, 862, 867; T. 778-80, 1662-63, 1811.)

313. UMCO's mitigation measures would probably allow the stream to function as a warm water fishery on at least a short term basis. (T. 1321, 1412-13, 1489-97, 1505-07.) There is insufficient research or evidence to know whether it could maintain such a use over the very long term. (T. 1327-28, 1344-45, 1352, 1489-98, 1505-08.)

314. This is not a case where only temporary and/or partial city water augmentation would have been necessary. Permanent and total replacement of natural flow with city water would have been required in the 6E Stream. (FOF 310.)

315. UMCO's proposed mitigation measures would not restore or repair the damage to the perched aquifers in the 6E watershed. (S.T. 856, 1783; T. 302, 338.)

316. The mitigation measures proposed by UMCO would not prevent the damage that will occur to the 6E Stream or hydrologic regime or restore the resource at any time in the foreseeable future. (T. 1270, 1672, 1783, 1830-31.)

317. Although it is theoretically conceivable that a damaged aquitard could be repaired *in situ*, the witnesses were not aware of it ever having been tried. UMCO has not proposed to do so as part of its mitigation plan. (T. 1270, 1783.)

318. UMCO has employed nearly identical mitigation measures in the 4E/5E watershed and they have neither prevented the subsidence damage nor resulted in the restoration of natural conditions in stream to date. (S.T. 154, 202, 311-13, 697, 849; T. 1411, 1672, 1778.)

319. The Department has never by law, regulation, policy, or practice allowed permanent or long-term augmentation with public water or other alternative sources as a mitigation measure. Augmentation is typically thought of as a temporary measure to be used until a stream recovers where it is expected that the stream will in fact recover naturally. It is also typically thought of as a way of supplementing, not replacing, natural flow. (T. 970, 983; U.Ex. 93, 99.)

320. Permanent and total supplantation of all natural flow in the former stream channel with city water does not maintain the values and uses of the stream. (T. 1000, 1342.)

321. It is the Department's policy that certain mitigation measures are acceptable temporary tools in the event of *unanticipated* impacts to streams. It does not follow from the requirement to submit a mitigation plan that a mine can be permitted where, as here, it is known that there will be a complete and permanent loss of a stream. (T. 347-48, 966, 998-99, 1006, 1617, 1636-39, 1644, 1820, 1822.)

322. If the Department determines through acid-base accounting or otherwise that a mine will cause acid mine discharges, it will not permit the mine, even if the operator promises in advance to treat the discharge. (T. 995-96.)

323. Because the damage to the 6E shallow perched system with its concomitant loss of surface water features is likely to be permanent, it is particularly important to ensure that it does not occur in the first place. The only practical way to do that at this time is to ensure that there is adequate cover over the coal seam to be mined to ensure the long-term integrity of the perched aquifer upon which the system depends. (T. 1770, 1783.)

Other Issues

324. It is the Department's longstanding policy that underground mining may cause some pollution and some disruption of the hydrologic balance so long as the values and uses of the waters in question are maintained in the long term. (T. 301, 989, 1003, 1603-07, 1637-38.)

325. The complete and permanent elimination of all surface water flow does not maintain the values and uses of waters. (T. 1000.)

326. The Department prohibited UMCO from longwall mining under the 6E Panel, not because of any personal animosity toward UMCO or its principals, but solely because it was known in advance that longwall mining would irreparably destroy the shallow groundwater and surface hydrologic system in the watershed. (S.T. 876-888, 983, 987; T. 1592; U.Ex. 80, 87.) UMCO was permitted to and in fact continued longwall mining in another panel. (U.Ex. 80, 87.)

327. The Department has not treated UMCO any differently than any other mine where it is shown that the operator will permanently dewater a hydrologic system that includes perennial streams. (T. 303, 347-48, 1820, 1826-27; U.Ex. 181.)

328. The Department has not applied any new regulation or binding norm in this case that changes how it regulates mines where it is known in advance that the mine will permanently dewater perennial streams. (T. 983, 993-94, 999, 1636, 1644, 1820-22, 1826-27.)

DISCUSSION

As previously mentioned, UMCO has only pursued three objections to the Department's order. UMCO's objections are as follows:

1. The Department applied the law incorrectly. Specifically, the Department applied a

standard of review that is unauthorized and contrary to law when issuing the order and concluding that the Clean Streams Law prohibits UMCO's longwall mining activities in the 6 East Panel after UMCO adopted measures to the extent technologically and economically feasible to maintain the uses of the 6E Trib pursuant to the Bituminous Mine Subsidence and Land Conservation Act, 52 P.S. § 1406.5(e).

2. The Department acted in a manner contrary to law in enforcing and otherwise implementing regulatory concepts or definitions of general applicability without proper rulemaking or procedures relating to the implementation of policy. These actions include but are not limited to, the Department's improper application of a Board decision in its administration and application of underground mining regulations and stream protection guidance.

3. The Department's action deprives UMCO of rights guaranteed by the Constitution of the United States of America and the Commonwealth of Pennsylvania including, but not limited to, equal protection and due process rights.

I. UMCO's First Objection: The Department Applied the Law Incorrectly Regarding Subsidence and Stream Damage

A. Description of the Issue

UMCO's first objection may be broken down into several subparts:

(1) Did the Department incorrectly apply the law in issuing an order to UMCO that
(2) allowed UMCO to room-and-pillar mine but not longwall mine
(3) one of the panels at UMCO's multipanel mine
(4) where longwall mining will eliminate permanently
(5) all flow
(6) in perennial surface waters
(7) where UMCO commits in advance
(8) to do everything that is technologically and economically feasible to maintain uses in the perennial stream in the watershed?

In this important and evolving area of the law, it is important to describe what issues are *not* before us in this appeal. As to subpart (1), UMCO has limited its case to a claim that "[t]he Department applied *the law* incorrectly (emphasis added)." Although UMCO originally argued that the Department abused its discretion, in the interest of streamlining this case for quick appellate review, UMCO amended its notice of appeal to delete that objection. Our review, of course, is limited to the issues raised in the notice of appeal.

25 Pa. Code § 1021.51; *Robachele, Inc. v. DEP*, EHB Docket No. 2005-091-L (June 14, 2006); *Bucks County Water and Sewer Authority v. DEP*, EHB Docket No. 2005-101-K, slip op. at 14-15 (April 17, 2006). Although we typically interpret notices of appeal very liberally to include any objection reasonably encompassed within the language of the notice, *Robachele; Delaware Riverkeeper v. DEP*, 2003 EHB 603, 605, UMCO made a deliberate choice to delete its specific, previously well-pled objection that the Department abused its discretion. Accordingly, our review is limited to determining whether the Department "applied the law incorrectly."[1]

With regard to subpart (2) of UMCO's first objection, the Department's Order did not prohibit all mining in Panel 6E. It only prohibited longwall mining. UMCO is still allowed to mine the panel with continuous miners (i.e. room-and-pillar mining). Although UMCO would not have been able to meet preexisting contractual commitments with that admittedly less productive method, there is no question that coal can be mined. This is not a case

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[1] A review for reasonableness adds an extra layer to our review of Departmental actions. The Department must act in accordance with the law *and* it must act reasonably. *Barra v. DEP*, EHB Docket No. 2003-038-L, slip op. at 4 (April 24, 2006); *see Baehler v. DEP*, 863 A.2d 57, 60 (Pa. Cmwlth. 2004). In other words, the Department may have the necessary legal authority to act, but its exercise of that authority in a particular case must still be reasonable. *See Shuey v. DEP*, 2005 EHB 657, 709. UMCO did not ask for this second level of review. Nevertheless, in the interest of generating a complete record, we hold that the Department acted reasonably under the facts and circumstances presented here.

where the Department has ceased all mining or denied a permit entirely.

On that note, the Department's order only related to one of UMCO's panels. For example, UMCO had already longwalled Panels 2E, 3E, 4E and 5E when the Department issued the Order. The Order did not prevent UMCO from longwall mining any of the remaining panels at the site. In fact, UMCO proceeded to mine Panel 9E after the Order was issued, but quit due to what it characterized as a combination of adverse geological conditions and frustration in dealing with the Department. The point here is that we are only reviewing one order affecting one panel in one way.

We have concluded as a matter of fact that the Department correctly determined that the longwall mining will *permanently* dewater the stream. Therefore, this case is not about a temporary flow loss.

The 6E Stream is perennial. It is perennial under every conceivable regulatory definition.[2] Thus, this appeal does not implicate the Department's authority to regulate the adverse effects of subsidence on intermittent or ephemeral streams. The 6E Stream flows continuously throughout the year, year in and

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[2] Whether there is any *practical* difference between the various definitions is debatable. Perhaps the most straightforward definition is set forth in Subchapter F (Subsidence Control) of Chapter 89 (Underground Mining) of Title 25 of the Pennsylvania Code, 25 Pa. Code § 89.141(b)(2) (a stream or part of a stream that flows continuously throughout the calendar year). The 6E Stream never stops flowing entirely and clearly meets this definition.

year out. Biological evidence supports that finding, but there is plenty of other evidence, including eyewitness testimony, to support the characterization of the stream as perennial even without the biological evidence.

UMCO states that it has committed in advance to do everything technologically and economically feasible to maintain the future designated uses of the 6E Stream. The key issue here is whether submittal of an adequate mitigation plan forces or requires the Department to issue a permit authorizing the permanent elimination of all natural flow in a perennial stream. This case is not about preparing for *unanticipated* damage. This case is not about what remedial measures the Department may require or other actions the Department may take in the event of an unanticipated stream loss. What standards apply or what approvals are necessary in such an event are not implicated in this case. Moreover, this case does not involve pooling or otherwise changing the exact flow characteristics of a stream because there will be *no* flow here. Finally, this is not an appeal from a Department action that allows temporary mitigation. UMCO's proposed measures will not restore the stream and they will need to be employed in for the foreseeable future.

Our short answer to UMCO's objection is that the Department applied the law correctly. The Department had the legal authority to issue the Order. UMCO proposed to longwall mine too close to the surface underneath vulnerable surface waters. The 6E Panel would have been the shallowest longwall mine in the history of recent coal mining in the state. There

is no question that it would have caused severe, irreparable damage. The fact that UMCO was willing to replace all stream flow in perpetuity with city water from a hydrant is not sufficient to justify the damage.

B. Factual Summary Relating to UMCO's First Objection[3]

The Order restricts UMCO to room-and-pillar mining in the 6E Panel. The Department issued the Order because the subsidence resulting from longwall mining the 6E Panel would have completely and permanently eliminated all flow in the surface water features and shallow groundwater regime, including all flow in the perennial section of the 6E Stream.

There was surprisingly little disagreement about the impact that longwall mining would have had in the 6E watershed. We quote from UMCO's brief:

> UMCO's experts, Mr. Bruhn and Dr. Bonetti, admit that longwall mining beneath the 6E Trib will cause subsidence impacts on the surface, which will disturb the perched water tables and impact the hydrologic balance in the 6E Trib and within the 6E Trib's watershed. Stream flow loss and impacts to the channel configuration are anticipated to occur as a result of the disturbance caused by mining. (footnote omitted). (Brief 79-80.)

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[3] We will not repeat our Findings of Fact in narrative form. This discussion is intended as a brief summary, and in some instances explanation, of a few select points.

UMCO's hydrogeologist, Dr. Joseph Bonetti, testified as follows:

> Q: Now, it is your opinion that longwall mining beneath the 6E Stream will cause a subsidence impacts of the surface, correct?
>
> A: Correct.
>
> Q: And it's also your opinion that they may disturb the perched aquifers that Mr. Kernic and others have been talking about?
>
> A: Yes. It's my opinion that as a result of longwall mining, the hydrologic balance of the entire watershed will be disrupted primarily due to fracturing.

(T. 844.)

The fundamental factual disagreement in this case, then, comes down to the *duration* of the flow loss. UMCO's claim is that the flow loss, even if extensive at first, will be short lived. (T. 845, 867, 873 (Bonetti); 1031 (Bruhn).) The Department and PennFuture's experts opine that the flow loss will be permanent, with no foreseeable recovery. (S.T. 817-18; T. 153-55 (Kernic); T. 1782 (Morgan).[4]

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[4] In truth, UMCO's case is oriented strongly toward its *legal* argument that the impact on the stream does not matter so long as UMCO promises feasible repairs. The impact may be severe and permanent, so long as UMCO commits to acceptable mitigation, which would in this case be flow augmentation in perpetuity. Nevertheless, UMCO presented extensive testimony

The first problem with UMCO's position is that it never defines "short-lived." In fact, its experts conceded that they could not opine how long the flow loss would continue. (FOF 285, 286.) Their position is that the stream is likely to recover some day. In fact, Dr. Bonetti conceded that the stream may never recover. (FOF 287.) This is a major concession and must not be ignored. If UMCO's own expert admits that the stream may never recover, it is hard to see how UMCO's mining could have been allowed to go forward. The fact that the stream may recover at some unknown future date obviously provides little comfort and hardly shows that there is no presumptive evidence of pollution.

Putting that aside, in resolving the factual dispute concerning how long the flow disruption will last, the dispute comes down to choosing between contradictory expert opinions. In other words, this case presents a classic battle of the experts.

The weight to be given to an expert's opinion depends upon such factors as the expert's qualifications, presentation and demeanor, preparation, knowledge of the field in general and the facts and circumstances of the case in particular, and the quality of the expert's data and other sources. Perhaps more fundamentally, we look to opinion itself to assess the extent to which it is coherent, cohesive,

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without objection that long-term mitigation measures will not be necessary as a matter of fact. Although this evidence seems to go beyond UMCO's notice of appeal, in the interest of creating a complete record, we find that UMCO is factually incorrect: perpetual mitigation will be required.

objective, persuasive, and well grounded in the relevant facts of a case. *Bethayres Reclamation Corp. v. DER*, 1990 EHB 570, 580-81. *See, e.g., Sunoco, Inc. (R&M) v. DEP*, 2004 EHB 191, 246, 249; *aff'd*, 865 A.2d 960 (Pa. Cmwlth. 2005); *Birdsboro & Birdsboro Municipal Authority v. DEP*, 795 A.2d 444, 447-48 (Pa. Cmwlth. 2002); *T.R.A.S.H. Ltd. v. DER*, 1989 EHB 487, *aff'd*, 1030 C.D. 1989 (Pa. Cmwlth. 1990); *Oley Twp. v. DEP*, 1997 EHB 660, 689-90, *aff'd*, 710 A.2d 1228 (Pa. Cmwlth. 1998). As the fact finder, weighing credibility and selecting among competing expert testimony is one of our most basic and important duties. *Bethayres*, 1990 EHB at 580.

The key experts who testified in this case are as follows: David Plowman (DEP biologist); James Mudge (UMCO biologist); John Kernic (DEP hydrogeologist); John Morgan (PennFuture subsidence expert); Joseph Bonetti (UMCO hydrogeologist); Robert Bruhn (UMCO subsidence expert). All of the experts were well qualified. (C.S.Ex. 2, 5; P.F.S. Ex. A; U.Ex. 16.)

We have no hesitation in accepting the opinion of both Kernic and Morgan that the 6E Stream would not recover in the foreseeable future. We reject Bonetti and Bruhn's contrary opinion. Kernic and Morgan's opinion is credible; Bonetti and Bruhn's is not.

When it comes to training and experience relative to the impact of subsidence on surface waters in general, the nod clearly goes to Kernic and Morgan. Although Bruhn has a wealth of experience regarding the mechanics of subsidence in general, he has somewhat less experience regarding subsidence impacts on streams. Dr. Bonetti never studied a

stream above a longwall panel before. He never previously looked at the impact of longwall mining on streams. (T. 824-25, 1722.) In contrast, Kernic has studied the hydrogeology of mining impacts on an almost daily basis for the last twenty years. (S.T. 498-99, 799-800; T. 95; C.S. Ex. 5.) Morgan has done extensive work in this area and is considered an international authority on this very topic.

With regard to presentation and demeanor, no one witness has the upper hand. Although they all had different styles, they all presented well and appeared to sincerely believe the opinions that they were expressing.

Although Morgan testified for PennFuture in this case, he rarely testifies for nonprofit organizations. (S.T. 976; T. 1799.) He spends the majority of his time working directly for mining companies. (S.T. 917.) And although Kernic disapproved of longwall mining UMCO's Panels 5E and 6E, he has obviously approved of many other longwall mines under streams.

Kernic was the most knowledgeable and best prepared expert regarding the facts of this particular case, which is not surprising given that he has lived, if you will, with the matter for years. (S.T. 801-08, 824; T. 97, 162, 340-41.) We find no fault with Morgan's preparation and site knowledge. Indeed, one of Morgan's most valuable roles was to explain to us how UMCO's various opinions were not particularly well prepared or grounded in the specific facts of this case.

UMCO did not call as experts the hydrogeologists that prepared its reports in dealing with the

Department. Instead, UMCO identified Bonetti and Bruhn for the first time on the eve of the hearing on the merits. Neither had anything approaching the site-specific background of Kernic.

We found Bonetti's and particularly Bruhn's testimony to be somewhat generic and based in some cases on inadequate study. For example, common sense and several witnesses all suggest that the impact of longwall mining on the 4E/5E Stream is the single best real-world indicator of what the impact of mining on the 6E Stream would have been. Yet Bruhn admitted, "I would have to say that I have not conducted any detailed study on 4E/5E." (T. 1059.) When asked: "So you haven't considered the 4E/5E East Stream in rendering your opinions whatsoever?" Bruhn answered, "That is correct." (T. 1060.) This deals a serious blow to Bruhn's credibility.

Our concern does not stop there. Bruhn used generic and/or default values for many of his calculations. (T. 1100-04.) He used whatever information his client provided to him with no independent analysis of reliability or accuracy. (T. 1240-41.) He gave vague answers in response to questions regarding his review of pertinent Departmental files. (T. 1093-95.) He used a computer model in predicting subsidence without calibrating it against known subsidence at the UMCO site. (T. 1098-99.) Bruhn used a photograph of a room-and-pillar mine in support of his theories regarding the closing of the postulated longwall mine void. (T. 1032, 1047.) (In a longwall mine, the rubbleized zone collapses immediately; there is no lingering mine void. (T. 1113.))

Bruhn relied heavily upon technical papers prepared by Francis Kendorsky (coincidentally and significantly a former employee and colleague of PennFuture's expert, John Morgan), but he misinterpreted Kendorsky's conceptualized zones of subsidence. (T. 1764-65.) Of serious concern in a case involving surface water features, he did not use the actual topography of the site. (T. 1106.) Bruhn relied upon incorrect data or perhaps oversimplified that data in opining about soft versus hard rocks in the strata. (T. 1754-57; P.F.Ex. 64.)

Bruhn relied on an assumption that only six or seven feet of the coal seam would be extracted. There is no factual basis for this counterintuitive assumption. Small differences in the amount of coal mined can make a big difference in calculating the predicted surface impacts of subsidence. The credibility of an expert suffers greatly when he relies on inaccurate factual assumptions. *Sunoco*, *supra*.

In response to various questions, Bruhn testified that rising water levels in the piezometers could be evidence of deep groundwater recovery, steady water levels could be evidence of deep groundwater recovery, and lowering water levels could be evidence of groundwater recovery. Although we have explained that deep groundwater recovery is neither here nor there in this case, Bruhn's overall credibility suffers in our eyes when he shows himself willing to make statements like these. If different piezometer levels could mean anything, they essentially mean nothing.

Aside from his lack of site-specific preparation, Bruhn seemed to function best in the realm of the

theoretical, regardless of whether those theories had any basis in reality at *any* actual mine site. He indicated that a functional middle zone (wherein subsidence cracks do not appear) could be as little as one foot. In other words, in a mining panel of thousands of square feet, twelve inches of strata one foot thick could isolate the surface from all subsurface cracks. (T. 1146.) Bruhn discussed "creep" and "mine void squeeze" and "residual subsidence," but his theories were rarely if ever backed up by personal observations, scientific evidence or papers, or personal experience. And to return to our original concern, none of the theories were backed up by site-specific information despite the fact that there has already been extensive mining at the site.

Kernic and Morgan did a good job of explaining why they believe the damage to the 6E Stream will be irreparable. They clearly have the facts on their side, not the least of which is the history of the 4E/5E Stream. Although all parties hope that the stream may someday recover, as of the close of the record in this case there were little positive sign that it will. Bruhn and Bonetti did not explain convincingly why they think the aquifer will "heal." Bonetti in particular took the approach that streams can and do recover, so this one probably will too. He has no personal knowledge of any recoveries under like circumstances. In fact, he has never been involved in a stream/subsidence case before. When Dr. Bonetti was asked to explain how "soft" rock heals, he could not explain the mechanism. It was just his "understanding of what happens." (T. 911.)

Unfortunately, Bonetti's opinion that the 6E Stream will recover appears to be little more than speculation. His graphs and data do not show a recovery of *natural* flow in 4E/5E. He relies on invalid and essentially meaningless piezometer data. He described data trends without including all available information. He relied heavily on questionable monitoring data. We are also troubled by his approach of trying to distinguish the amount of flow in the 6E Stream channel itself that comes from springs as opposed to baseflow. Bonetti himself acknowledged that the spring flow and baseflow is all part and parcel of the same hydrologic system. It is the perched system as a whole that matters. When that system is compromised, the 6E Stream is compromised, regardless of what percentage of headwater flow comes from springs. Kernic and Morgan have credibly explained how *both* spring flow and baseflow will be lost. Bonetti's presentation was not altogether internally consistent.

Kernic and Morgan's opinions regarding the long term threat to the stream are highly persuasive and well grounded in the known facts. Of course, it is helpful that their opinions are entirely consistent. They credibly explained why the threat to the 6E Stream is so significant. They point to the lack of adequate cover as the bottom-line problem. They explained how subsidence fractures will affect not only the surface but the critical aquitards that support the entire system.

The 6E Stream is a highly vulnerable, already compromised upland valley stream. It is dependent upon perched aquifers. Surface fracturing would cause

enough damage to dewater the stream. More seriously as relating to the duration of the problem, applying appropriate calculations to site-specific conditions, they showed that fractures from mining will intercept the perched aquifers themselves from above and from below. Groundwater flow will be lost to lower levels. The water will eventually emerge again somewhere, but it will be too far downstream to do 6E any good.

There is not enough cover over the 6E Panel. Furthermore, a dangerously high percentage of the 6E Stream and springs, their recharge zones, and supporting aquifers are located over permanent tension zones in the panel, i.e., areas where subsidence fractures tend to remain pulled apart.

The 6E and 4E/5E Streams have the same hydrogeology. The 4E/5E Stream is the best indicator of what can be expected to occur in the 6E watershed. UMCO's own consultants have stated that the 4E/5E Stream is an appropriate analog area. (U.S.Ex. AA.) UMCO's mining dewatered the 4E/5E Stream and shallow system. The stream and other surface water features have not recovered as of the time of the hearing despite the passage of considerable time and periods of above-average precipitation. Other similar streams in the area continued to flow through periods of drought as the nearby 4E/5E Stream dried up. Water did not flow in the stream even after the remnants of Hurricane Francis came through. Although the 4E/5E Stream is a good indicator of what would happen if 6E were undermined, the 6E Stream is more vulnerable to permanent damage than the 4E/5E Stream for several reasons. 6E has lower cover at places, the 6E Stream runs parallel to the panel,

much of the stream is in the permanent tension zone, the stream is already stressed, there would have been multiple mining passes under the 6E Stream, there is a greater amount of hard rock in pertinent lithologies, there is known preexisting fracturing in 6E, and other factors. Thus, even if 4E/5E eventually recovers, it does not necessarily follow that 6E would similarly recover. As of the hearing, UMCO had replaced flow in the 4E/5E Stream with 28,340,000 gallons of public water. Yet, the stream was still losing flow.

The 6E watershed is 185 acres. 108 acres have already been mined. Only a few small areas would have been unmined if the 6E Panel had been mined as planned. The panel would have undergone multiple mining passes.

Morgan explained how the limited piezometer data in this case is almost entirely meaningless and does not support a claim that the 6E shallow groundwater/surface water system could ever be restored. The piezometers appear to have been improperly constructed. Even Dr. Bonetti agreed that the piezometers only measure the regional water table, which is a separate system than the shallow system at issue here. The trends in the results are not clear. The piezometers showed a rapid rise following UMCO's stream augmentation, which could suggest what is already known--surface/shallow water is going straight to deeper levels.

To the extent that "soft" rocks tend to "heal" better than "hard" rocks, hard rocks predominate in the strata between the 6E springs/stream and the coal seam. Dr. Bonetti acknowledged that the confining

rock units that were fractured by mine subsidence will remain fractured. (T. 911.)

While there is some indication that some of the fractures in the *surface* subsidence zone can fill in and/or close over time, there is no evidence that the *subsurface* cracks can or will close or otherwise stop acting as a conduit for groundwater infiltration. When deeper groundwater levels recover, it is because the new void spaces created by mining fill back up with water. As a very rough analogy, one can think of a spring-fed quarry pit that gradually fills up with water after mining is terminated. The fact that the pit is filling up with water obviously does not mean that the pit has closed up. By definition, this recovery process does not work with a bottomless, perched system. The void spaces are isolated at a higher level and cannot fill up with water. The water will simply continue to pass through to lower levels. It is these subsurface fractures that will cause the greatest irreparable damage to the 6E Stream.

Other streams that suffer adverse effects have recovered over longwall mines, but never when there is the perfect storm of adverse risk factors that are present in the 6E Panel. UMCO was unable to point to any other similar site where flow has recovered. Kernic has never seen such recovery under circumstances like those present here.

After an exhaustive study of the record, we have been left without any doubt that the Morgan and Kernic opinions (of no foreseeable recovery) are credible, Bonetti and Bruhn's opinions (of short-term recovery) are not, and that the Department was correct

in concluding that UMCO's longwalling would have permanently dewatered the previously perennial flow of the 6E Stream.

UMCO and the Department also presented the testimony of biological experts, but we detected little or no disagreement on critical points. There was no disagreement that the 6E Stream is a perennial stream supporting a warm water fishery. There was no disagreement that the same can be said of the 4E/5E Stream premining. There was no disagreement that the 4E/5E Stream is currently artificially maintaining a warm water fishery. Whether the quality of the fishery matches its premining quality is not particularly relevant in this case. UMCO's expert testified that there is not enough information and it is otherwise too early to tell to what extent, if any, the 4E/5E Stream has recovered its natural flow, and we accept that opinion. Again, that issue is not particularly relevant here. The primary relevance of the 4E/5E Stream in this appeal is its value as a tool in predicting the subsidence effects on the 6E Stream. Finally, neither biologist opined that city water augmentation would be appropriate and/or sustainable in perpetuity, and both acknowledged the rather obvious notion that a return of *natural* flow is the desired goal.

C. The Department's Legal Authority to Issue the Order

Although UMCO attempted to prove that the stream damage would be temporary, UMCO contends that it really does not matter whether its mining will permanently eliminate all flow in the 6E Stream.

UMCO's position, quite simply, is that even if its mining will eliminate a perennial stream, it *must* be allowed to mine, with only one condition: UMCO must promise that it will employ measures to the extent technologically and economically feasible to maintain uses of the stream. In other words, the Department has no discretion in this area.[5] The Department has no authority to prohibit mining so long as the operator makes the requisite promise. It does not matter whether the measures will actually work. It does not matter whether the measures must go on in perpetuity. In fact, UMCO's principal, Mr. Robert Murray, succinctly responded to questioning concerning this issue as follows:

> Q. So, as I understand what your testimony is, you believe that mining companies such as yours have the ability to mine under a stream so long as they commit to then, after the fact, committing resources to the extent economically and technologically feasible to repair any harm done to the stream. Is that accurate?
>
> A. Yes, sir.

(T. 814.)

UMCO argues that it has the right to eliminate any stream of its choosing so long as it promises to employ

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[5] UMCO's position that the Department lacks any discretion in this area might explain why UMCO dropped its objection that the Department abused its discretion. The Department cannot abuse discretion that it does not have.

feasible mitigation measures, or, stated another way, that the Department has no legal authority to prevent such behavior. Yet, it would seem to be beyond peradventure that the Department has the legal authority to prevent the permanent elimination of the Commonwealth's streams. Section 610 of the Clean Streams Law reads as follows:

> The Department may issue such orders as are necessary to aid in the enforcement of the provisions of this act. Such orders shall include, but shall not be limited to, orders modifying, suspending, or revoking permits . . . . Such an order may be issued if the Department finds that a condition existing in or on the operation involved is causing or creating a danger of pollution of the waters of the Commonwealth . . . .

35 P.S. § 691.610. Thus, the Department has the clear legal authority to issue orders that prohibit an operation that creates a danger of pollution of the waters of the Commonwealth. *See also* Section 611, 35 P.S. § 691.611 (unlawful to commit water pollution); 35 P.S. § 691.5 (authority to issue orders); 25 Pa. Code § 86.37 (no presumptive evidence of pollution to waters of the Commonwealth); § 89.36(a) (ensure protection of the hydrologic balance and prevent adverse hydrologic consequences); § 89.52(a) (protect environmental values); § 89.142a(h) (protect values and uses of streams). There is abundant case law that confirms the Department's authority. *PUSH v. DEP*, 1999 EHB 457, 600-13, *aff'd*, 789 A.2d 319 (Pa. Cmwlth. 2001); *Rohm & Haas Co. v. Cont'l Casualty Co.*, 781 A.2d 1172, 1178 (Pa. 2001) (discussing the Department's

authority to compel companies to clean up pollution and remedy environmental damage caused by their operations); *Com. v. Coward*, 414 A.2d 91, 96-97 (Pa. 1980) (discussing the Department's express authority to issue orders abating or preventing pollution).

"Waters of the Commonwealth" are defined very broadly in the Clean Streams Law as

> any and all rivers, streams, creeks, rivulets, impoundments, ditches, water courses, storm sewers, lakes, dammed water, ponds, springs and all other bodies or channels of conveyance of surface and underground water, or parts thereof, whether natural or artificial, within or on the boundaries of this Commonwealth.

35 P.S. § 691.1. There is no question that the 6E Stream is part of the waters of the Commonwealth as so defined. (S.T. 690-91, 801; T. 33-34; C.Ex. 18.) For that matter, the appurtenant springs, seeps, and wetlands on the 6E Panel clearly fall within the statutory definition of waters of the Commonwealth. *See* 35 P.S. § 691.1; (S.T. 690-91, 801; T. 33-34; C.Ex. 18.)

"Pollution" is also defined broadly:

> "Pollution" shall be construed to mean contamination of any waters of the Commonwealth such as will create or is likely to create a nuisance or to render such waters harmful, detrimental or injurious to public health, safety or welfare, or to domestic, municipal, commercial, industrial, agricultural,

> recreational, or other legitimate beneficial uses, or to livestock, wild animals, birds, fish or other aquatic life, including but not limited to such contamination by alteration of the physical, chemical or biological properties of such waters, or change in temperature, taste, color or odor thereof, or the discharge of any liquid, gaseous, radioactive, solid or other substances into such waters. . . . .

35 P.S. § 691.1. UMCO suggests, somewhat in passing, that subsidence impacts do not cause pollution and, even if they do, they may not be regulated unless they interfere with the water's values and uses. UMCO is incorrect. Subsidence impacts can clearly cause pollution. *Consol Pennsylvania Coal Co. v. DEP ("Consol I")*, 2002 EHB 1038, 1042, and 1045; *Consol Pennsylvania Coal Co. v. DEP ("Consol II")*, 2003 EHB 239, 243; *Consol Pennsylvania Coal Co. v. DEP ("Consol III")*, 2003 EHB 792, 795, 800. *See also Tinicum Township*, 2002 EHB 822; *Oley Township v. DEP*, 1996 EHB 1098, 1117-18.

Although not directly on point, the Supreme Court's recent decision in *S.D. Warren Co. v. Maine Board of Environmental Protection*, 126 S.Ct. 1843 (2006), is worth passing comment. In that case, the court held that the term "discharge" as used in 33 U.S.C. § 1341(a)(1) (state certification of federally licensed projects) covers releases from hydroelectric dams, even though there is no addition of pollutants. The Court's reasoning included the following discussion:

> Congress passed the Clean Water Act to "restore and maintain the chemical, physical,

and biological integrity of the Nation's waters," 33 U.S.C. § 1251(a); see also *PUD* No. 1, 511 U.S., at 714, 114 S.Ct. 1900, the "national goal" being to achieve "water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water." 33 U.S.C. § 1251(a)(2). To do this, the Act does not stop at controlling the "addition of pollutants," but deals with "pollution" generally, see § 1251(b), which Congress defined to mean "the man-made or man-induced alteration of the chemical, physical, biological, and radiological integrity of water." § 1362(19).

The alteration of water quality as thus defined is a risk inherent in limiting river flow and releasing water through turbines. Warren itself admits that its dams "can cause changes in the movement, flow, and circulation of a river . . . caus[ing] a river to absorb less oxygen and to be less passable by boaters and fish." And several *amici* alert us to the chemical modification caused by the dams, with "immediate impact on aquatic organisms, which of course rely on dissolved oxygen in water to breathe." Then there are the findings of the Maine Department of Environmental Protection that led to this appeal:

> "The record in this case demonstrates that Warren's dams have caused long stretches of the natural river bed to be essentially dry and thus unavailable as habitat for indigenous populations of fish and other aquatic organisms; that the dams have blocked the passage of eels

> and se-run fish to their natural spawning and nursery waters; that the dams have eliminated the opportunity for fishing in long stretches of river, and that the dams have prevented recreational access to and use of the river."

126 S.Ct. at 1852-53 (some citations omitted). Similarly, in the context of the Pennsylvania Clean Streams Law, mine subsidence can cause deleterious changes in the physical and biological integrity of streams. It can change the movement, circulation, and flow of streams, and, as this case demonstrates, it can cause stretches of a natural streambed to be essentially dry and thus unavailable as habitat.

Of course, "pollution" is an extremely broad term and not all pollution in its most literal sense can or should be regulated. UMCO contends that only pollution that interferes with values and uses may be regulated. PennFuture disagrees. These are difficult issues. *Compare PUSH*, 789 A.2d at 329 (Clean Streams Law requires that pollution affect the uses of the water) with *Machipongo Land and Coal Company v. DEP*, 799 A.2d 751, 774 (Pa.), *cert. denied*, 123 S.Ct. 48 (2002) ("[w]e believe that the public has a sufficient interest in clean streams alone regardless of any specific use thereof.") and *Commonwealth v. Barnes & Tucker Company*, 319 A.2d 871, 882 (Pa. 1974) (rejecting theory that only preexisting use must be protected). Furthermore, just as "pollution" can be defined broadly, "interference" with values and uses is an exceedingly vague term. If a formerly robust fishery is severely damaged but can sustain one or two minnows, has there been interference with use as a

WWF that may be regulated? Fortunately, there is no need to define the outer limits of the Department's legal authority or responsibility in this case. UMCO's longwalling under the 6E Stream would have completely and permanently dried up every surface water feature including the stream itself and compromised entirely the shallow groundwater system in the panel.[6] We can say without fear of reasonable contradiction that the *permanent elimination* of *all* surface and shallow groundwater flow in a watershed as a result of subsidence not only constitutes "pollution," but that such pollution also completely interferes with the values and the present and reasonably foreseeable future uses of the system. The *permanent* elimination of *all* flow also constitutes a disruption of the hydrologic balance, 25 Pa. Code § 89.36, constitutes an adverse hydrologic consequence, *id.*, and does not protect fish, wildlife, and related values, 25 Pa. Code § 89.142a(h). In short, the Department has not exceeded, let alone approached, the limits of its regulatory authority under the Clean Streams Law in this case. Resolution of PennFuture's theory that *any* pollution or *any*

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[6] Throughout this opinion, when we say that the waters will be "eliminated," we have not failed to recognize that the former surface features (e.g. the former stream channel) will collect snow melt and stormwater runoff. Beyond this immediate and short-lived reaction to precipitation, however, there will be no water. We also do not fail to recognize that nothing in nature is truly "permanent." We are concerned with the foreseeable future measured in human terms.

interference *must* be prohibited will need to wait another day.[7]

UMCO refers us to Judge Coleman's opinion rejecting a supersedeas petition in *Borough of Roaring Spring v. DEP*, 2003 EHB 825. We are not sure why. In *Roaring Springs*, Judge Coleman stated the rather obvious point that a mine permit applicant need not prove "with absolutely certainty" that proposed mining will not cause pollution. 2003 EHB at 841. We certainly agree, but here, the Department has required no such showing. In *Roaring Spring*, third-party appellants failed to show a hydrogeological connection between the mining and the water resource at issue. Here, the connection is not disputed and irrefutable. Furthermore, *Roaring Spring* reconfirmed the basic principle that a reduction in flow caused by mining can constitute pollution that is within the authority of the Department to regulate. 2003 EHB at 840. *See also Birdsboro v. DEP*, 795 A.2d 444, 448 (Pa. Cmwlth. 2002) (rejecting position that a mine applicant must show *no* pollution will occur; applicant only required to show "no evidence that presumptively indicates pollution will occur").

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[7] We would note, however, that the Department has very broad legal authority, but it also must act with reasoned discretion. Just as the Department does not have a *mandatory* duty to allow mining as UMCO asserts, it is unlikely that it has a *mandatory* duty to disallow mining as PennFuture asserts. The Department may have legal authority to preclude longwall mining that results in only minor and/or temporary disruption, but whether doing so would be a reasonable exercise of discretion will turn on the facts of each individual case.

Actually, UMCO does not put much effort into arguing that the Clean Streams Law would ordinarily be inapplicable in the case of complete stream elimination. Rather, UMCO's primary contention is that the more specific provisions of the Mine Subsidence Act, 52 P.S. § 1401 *et seq.*, supersede the provisions of the Clean Streams Law that might have otherwise applied in this situation. UMCO's position is that, "[i]n reconciling both the Clean Streams Law and the Mine Subsidence Act as it relates to underground bituminous longwall coal mining, the only rational interpretation is: (i) planned subsidence under streams cannot be prohibited and (ii) mining operators only have to take mitigation measures to protect foreseeable uses of streams to the extent technologically and economically feasible." (Brief at 56.)

UMCO relies first and foremost on one provision in the Mine Subsidence Act; namely, Paragraph (e) of Section 5, 52 P.S. § 1406.5(e), which reads as follows:

> An operator of a coal mine subject to the provisions of this act shall adopt measures . . . that he will adopt to prevent subsidence causing material damage to the extent technologically and economically feasible, to maximize mine stability, and to maintain the value and reasonable foreseeable use of such surface land: Provided, however, [t]hat nothing in this subsection shall be construed to prohibit planned subsidence in a predictable and controlled manner or the standard method of room and pillar mining.

UMCO places particular emphasis on the last clause of the provision, which provides that "nothing in this subsection shall be construed to prohibit planned subsidence in a predictable and controlled manner." *Id.* ("Planned subsidence in a predictable and controlled manner" is longwall mining.)

UMCO is reading far too much into Section 1406.5(e). First, the cited language only refers to the subsection itself. It does not say "nothing *in this statute* shall be construed to prohibit planned subsidence." It certainly does not say "nothing *in this statute or in any other statute or regulation* shall be construed to prohibit planned subsidence." The last clause in Subsection 1406.5(e) simply states that preceding parts of "this subsection" are not to be interpreted to preclude longwall mining.

The concluding proviso of the subsection makes perfect sense after one reads the beginning of subsection 1406.5(e). It is well known that longwall mining can result in "subsidence causing material damage." Without the proviso, it is not hard to appreciate the Legislature's concern that a court would read that the duty "to prevent subsidence causing material damage" equates to a prohibition on all longwall mining. The proviso makes it clear that the Legislature had no such intent. In other words, even though longwall mining can cause material damage, it is not to be prohibited *on that basis alone*. We do not read the proviso to have any more meaning than that.

Longwall mining is permitted in Pennsylvania, but not without condition. Subsection 1406.5(e) does not provide otherwise. There are hundreds of other

conditions and requirements that regulate longwall mining that are located throughout the statute itself, in other applicable statutes, and in the Environmental Quality Board's regulations. The simple proviso at the end of subsection 1406.5(e) cannot be read to trump every other legal requirement in force in Pennsylvania. UMCO's contention that one proviso was intended to trump the entire Clean Streams Law and every regulation promulgated thereunder is, with apologies, absurd. Subsection 1406.5(e), so heavily relied upon by UMCO, does not so much as mention water resources.

Although the final clause tells us that Subsection 1406.5(e) was not intended as a legislative prohibition on all longwall mining, even the subsection itself places some conditions on the right to longwall mine coal. In fact, the subsection contains three conditions. An operator is not allowed to mine unless it adopts measures that do three things:

> (1) "prevent subsidence causing material damage to the extent technologically and economically feasible";
>
> (2) "maximize mine stability"; and
>
> (3) "maintain the value and reasonably foreseeable use of such surface land."

We are having trouble understanding why UMCO believes that this language helps its position. Subsection 1406.5(e) does not appear to have anything to do with water resources, but to the extent that surface waters are encompassed in the value and use of "surface land" (§ 1406.5(e)(3)), Subsection 1406.5(e)

requires UMCO to maintain the value and reasonably foreseeable use of the waters. *Accord*, 25 Pa. Code § 89.142a(h)(1)(underground mining to be conducted in a manner which maintains the value and reasonably foreseeable uses of perennial streams). This obligation is not consistent with UMCO's assertion that it has the right to permanently dewater any stream of its choosing. The permanent loss of a stream does not maintain its value and reasonably foreseeable uses.[8] We do not see any support whatsoever in the language of Subsection 1406.5(e) for UMCO's position that planned subsidence under streams cannot be prohibited under any circumstances.

The parties refer to us to *PUSH v. DEP*, 1999 EHB 457, *aff'd*, 789 A.2d 319 (Pa. Cmwlth. 2001). We certainly agree that that landmark litigation is helpful in this case. In the context of a discussion regarding subsidence damage to homes, we described the effect of Subsection 1406.5(e) as follows:

> The coal mining company should strive to prevent subsidence causing material damage to the extent technologically and economically

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[8] The statute does not qualify the duty to maintain the value and reasonably foreseeable use of surface land "to the extent technologically and economically feasible." That qualifying phrase only relates to the operator's duty to prevent subsidence causing material damage. Operators must prevent subsidence to the extent they can feasibly do so, but they also must maintain the value and foreseeable uses of surface land. The regulations, however, require repairs to perennial streams to be performed to the extent economically and technologically feasible. 25 Pa. Code§ 89.142a(h)(2). The appropriate standard for judging adequate mitigation, however, is not implicated in this appeal.

> feasible, to maximize mine stability, and to maintain the value and foreseeable use of such surface land. However, this section cannot be used to prevent a coal mining company from longwall mining. If subsidence from longwall mining occurs and causes material damage (or *any* damage, for that matter) to a dwelling, the coal mining company is obligated to repair the damage. If mining would result in irreparable damage to the dwelling, then under Section 1406.9a(b), the Department *can* prohibit the mining.

1999 EHB at 533. If the Department can prohibit mining that will result in irreparable damage to dwellings, there is hardly anything revolutionary in the idea that the Department can, as it did in UMCO's case, prohibit irreparable damage to streams.

We also held in *PUSH* that a deep mine operator must demonstrate that the longwall mining activities are planned in such a way as so as to prevent subsidence damage to aquifers and perennial streams, citing 25 Pa. Code §§ 89.35 and 89.36. 1999 EHB at 555.[9] Somewhat prophetically, we noted that dewatering caused by underground mining occurs when the mine or fractures caused by subsidence reach the shallow groundwater zone and divert water downward. Streams can be protected if the mine is far enough away from the groundwater zone so as not to direct the water. "Dewatering of perennial streams is

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[9] Intermittent streams were not at issue in *PUSH*, just as they are not at issue here.

usually prevented if the underground mine workings are at least 400 feet below the stream. In areas where there is not 400 feet of cover, leaving 50 percent of the coal in the ground has proven successful in limiting the occurrence of fractures which would act as conduits to divert the water downward." *Id.*, 1999 EHB at 557.

It is easy to see that the record in the instant case regarding these basic principles is entirely consistent with our discussion in *PUSH*. Although most of the mine in *PUSH* had 500-600 feet and even up to 800 feet of cover, Eighty-Four planned its mining so that it would leave 50 percent of the coal in place in a small area that had less than 400 feet of cover. *Id.* Moreover, the stream in question was "one of the largest continuously flowing streams in the area," 1999 EHB at 558, and was thus much less vulnerable to dewatering than the 6E Stream. In the interest of protecting the stream, Eighty-Four Mining, unlike UMCO, was apparently willing to make a reasonable accommodation in its mining plan.[10]

UMCO does not point to any provision other than Subsection 1406.5(e) in the Mine Subsidence Act that expressly limits the Department's otherwise clear and obvious authority under the Clean Streams Law and the regulations discussed above to prohibit mining that will permanently eliminate a stream. UMCO does argue that Section 9.1(c) of the Mine Subsidence Act,

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[10] As discussed more fully below, UMCO's claims that it has been treated unfairly vis-a-vis other mining companies and that the Department has enforced radically new standards in this case ring hollow.

52 P.S. § 1406.9a(c), supports its position by implication. That section lists the following five surface features under which longwall mining will not be permitted if it would cause material damage or reduce reasonably foreseeable uses of those features:

> (i) public buildings and facilities;
>
> (ii) churches, school or hospitals;
>
> (iii) impoundments with a storage capacity of twenty acre-feet or more;
>
> (iv) bodies of water with a volume of twenty acre-feet or more; or
>
> (v) any aquifer or body of water that serves as a significant water source for any public water supply system.

52 P.S. § 1406.9a(c). We do not read this provision to imply that longwall mining can occur under anything else regardless of any harm that may occur. No such negative implication is required. If operators were to be given *carte blanche* to do whatever damage they wanted under any stream in Pennsylvania that does not serve as a public water supply, which would represent a radical departure from the Clean Streams Law, we believe that the Legislature would have said so. UMCO's argument is also inconsistent with applicable regulations. *Compare, e.g.*, 25 Pa. Code § 89.141(d)(11) (requiring description of measures to be taken to maintain value and uses of perennial streams) with § 89.141(d)(12) (requiring description of

measures to be taken to prevent material damage to streams serving as significant water supplies).

Left with no statutory provisions that expressly support its position, UMCO is left to argue that the Mine Subsidence Act is the *exclusive, preclusive* source of legal authority for regulating underground mining subsidence, and since the Subsidence Act does not expressly prohibit longwall mining under streams regardless of consequences, such mining must be allowed. Again, UMCO's argument lacks any merit.

First, UMCO is correct that the Subsidence Act obviously does not contain any provision that expressly prohibits longwall mining under streams. To the contrary, UMCO itself longwall mined under streams before and after the Order was issued in this case. Longwall mining under streams is occurring throughout southwest Pennsylvania. Longwall mining, if there is sufficient cover and the conditions are right, can be performed with no damage to overlying streams. *PUSH, supra*. There also are cases where longwall mining can be performed with only limited and/or temporary damage to streams, but that situation is not implicated in this case.

The defect in UMCO's reasoning is that it somehow takes the fact that the Subsidence Act does not expressly prohibit longwall mining under streams to mean that the Department can never prohibit longwall mining under streams. This is a *non sequitor*. It simply does not follow from the lack of an express prohibition on mining in the Subsidence Act that the Department can never preclude mining where, as here, severe environmental damage will result.

UMCO argues repeatedly that the Mine Subsidence Act and the Clean Streams Law must be read in harmony. We could not agree more. Where we split company with UMCO is that we see no conflict between the two laws. We have searched the Subsidence Act in vain for any provision that limits the Department's authority to regulate water pollution. In fact, the Subsidence Act has very little to do with water resources. It nowhere in purpose, language, tenor, or intent suggests that it was intended to override the Clean Streams Law and function as the exclusive basis for regulating subsidence impacts on water resources.

Instead, we found very much to the contrary. Section 9.1(d) of the Act reads as follows:

> Nothing in this act shall be construed to amend, modify or otherwise supercede standards related to the prevailing hydrologic balance contained in the Surface Mining Control and Reclamation Act of 1977 (Public Law 95-87, 30 U.S.C. § 1201 *et seq.*) and regulations promulgated by the Environmental Quality Board for the purpose of obtaining or maintaining primary jurisdiction over the enforcement and administration of that act nor any standard contained in the act of June 22, 1937 (P.L. 1987, No. 394) known as "The Clean Streams Law," or any regulation promulgated thereunder by the Environmental Quality Board.

52 P.S. § 1406.9a(d). When we read Section 9.1(d) and Subsection 1406.5(e) together, we see no conflict or

ambiguity in concluding that, while longwall mining is generally permitted even though it causes planned subsidence, it must be performed in a way that complies with the Clean Streams Law. The permanent and complete elimination of a perennial stream is not consistent with the Clean Stream Law.

The Department makes a good point when it notes that, if UMCO is correct, there would be no need for hydrogeologic review of mining permits. Operators would simply need to list their mitigation measures, but other than that, they would be free to eliminate all surface waters of their choosing in any mining region. We cannot believe that the Legislature intended such a result when it passed the Subsidence Act.

It is much more likely that the Legislature intended a reasonable accommodation between the rights of mining companies and the protection of waters of the Commonwealth. Allowing operators to take any stream they chose does not reflect such an accommodation and is not embodied anywhere in the letter or spirit of the Mine Subsidence Act. Rather, the Act unequivocally provides that it shall not be "construed to amend, modify or otherwise supersede" any standard related to the Clean Streams Law. 52 P.S. § 1406.9a(d).

This Board has previously addressed the interplay between the Clean Streams Law and the Mine Subsidence Act. Indeed, as far back as *Bethenergy Mines v. DER*, 1994 EHB 925, the Department's authority to regulate subsidence impacts to streams was presumed. We addressed these issues more recently in *Consol I*, 2002 EHB 1038. In *Consol I*, the

operator challenged a permit provision that read in part as follows:

> If permittee wishes to conduct full extraction mining in the revision area, it must submit another permit revision application seeking approval pursuant to, among other things, 25 Pa. Code Chapters 86, 89, 93 and 105.

Pertinent to the discussion here, we held "that the water-protection regulations promulgated pursuant to the Clean Streams Law and codified in 25 Pa. Code Chapters 86 and 89 apply to the subsidence impacts of underground mining on waters of the Commonwealth. The Department, therefore, acted properly in referencing those chapters in the Condition." 2002 EHB at 1045.

Because our reasoning in *Consol I* is directly on point here, we quote it at length:

> We start with the undisputed proposition that subsidence can change the course, current or cross-section of streams. . . . Indeed, it can make portions of a stream disappear altogether. Consol admits that its proposed mining at the Bailey Mine will cause some increased pooling in overlying streams. . . . Such impacts fit within the Clean Streams Law's definition of "pollution," which includes physical alteration of surface waters such as a diminution or deviation in flow. 35 P.S. § 691.1. *See Oley Township v. DEP*, 1996 EHB 1098, 1117-18 (change in water level in wetlands that could compromise their ecological functions would

constitute a violation of the Clean Streams Law). *Accord, PUD No. 1 of Jefferson County v. Washington Department of Ecology*, 114 S.Ct. 1900 (1994) (diminution in water quantity constitutes pollution). Such impacts can also disrupt the "hydrologic balance," which refers to "[t]he relationship between the quality and quantity of water inflow to, water outflow from and water storage in a hydrologic unit such as a drainage basic, aquifer, soil zone, lake or reservoir. It encompasses the dynamic relationships among precipitation, runoff, evaporation and changes in groundwater and surface water storage." 25 Pa. Code § 89.5. *See generally Tinicum Township v. DEP*, EHB Docket No. 2002-101-L, slip op. at 13, 15 (September 18, 2002) (Department's duty to evaluate effects of mining on waters of the Commonwealth extends beyond water-quality impacts).

* * *

There are several regulations in [25 Pa. Code] Chapter 86 and 89 that require the Department to regulate pollution and the alteration of hydrologic balance, and, therefore, the subsidence impacts of deep mining. *See* 25 Pa. Code §§ 89.35 (prediction of hydrologic consequences), 89.36 (protection of hydrologic balance) and 89.52(a) (protection of hydrologic balance). Section 86.37(a)(3) requires Consol to demonstrate that there is no presumptive evidence of potential pollution (which includes the adverse impacts of subsidence) of the waters

of the Commonwealth (not just perennial streams) before it is entitled to a permit. 25 Pa. Code § 86.37(a)(3). See also 25 Pa. Code § 86.37(a)(4) (protection of hydrologic balance). Protecting the waters of the Commonwealth is a primary concern of these mining regulations. *Empire Coal Mining and Development v. DEP*, 1995 EHB 944, 987. Consol's mining activities may only be permitted in accordance with these regulations. Consol is incorrect to the extent that it suggests that none of Chapter 86 applies to underground mining. *See* 25 Pa. Code §§ 86.2; *PUSH*, 1999 EHB at 559 (applying § 86.37 to analysis of deep mining discharges). *See also* 25 Pa. Code § 86.1 (defining "coal mining activities" (regulated under Chapter 86) to include "underground mining activities," which is also defined).

Consol attempts to avoid the rather obvious application of the water-protection regulations in Chapter 86 and 89 by arguing that the subsidence impacts of mining are addressed in a more focused manner in the Subsidence Act and Subchapter F of Chapter 89. 25 Pa. Code §§ 89.141-155. If therefore follows, Consol contends, that the Department may only regulate subsidence impacts on waters of the Commonwealth pursuant to that Act and that limited set of regulations.

Consol's argument flies in the face of Section 9.1(d) of the Subsidence Act, 52 P.S. § 1406.9a(d), which expressly provides that nothing in the Subsidence Act is to be construed

to amend, modify, or otherwise supersede any standard contained in the Clean Streams Law or any regulation promulgated under the Clean Streams Law. *See also* 52 P.S. §§ 1406.2 (purposes of Subsidence Act include aiding in the preservation of surface water drainage) and 1406.5(a) (application to mine must include map showing location of all bodies of water, rivers, and streams). Such regulations as Sections 86.37 and 89.36 were promulgated under the Clean Streams Law. (*See* "Authority" notations at beginning of Chapters 86 and 89.)

Similarly, there is nothing in Subchapter F of Chapter 89 that states that it is to serve as the exclusive source of regulatory authority regarding subsidence. Indeed, in light of Section 9.1(d) of the Subsidence Act, any attempt in Subchapter F to limit the scope of the Clean Streams Law or the regulations promulgated thereunder would have been ineffective and unlawful. *See Lancaster Laboratories, Inc. v. Commonwealth*, 578 A.2d 988, 992 (Pa. Cmwlth. 1990), *aff'd*, 633 A.2d 588 (Pa. 1993); *Harmar Coal Co. v. DER*, 306 A.2d 308, 319 (Pa. 1973) (a regulatory program that is inconsistent with an implementing statute is invalid).

Even in the absence of Section 9.1(d) of the Subsidence Act, we would require rather unequivocal and convincing evidence that the Legislature exempted subsidence impacts from the operation of the Clean Streams Law and otherwise applicable regulations promulgated thereunder before we would conclude that those

> water-protection laws do not apply. *See Carroll v. Ringgold Education Ass'n*, 680 A.2d 1137, 1141-42 (Pa. 1996) (two statutes apply where it is possible to comply with both); *Parisi v. Philadelphia Zoning Board of Adjustment*, 143 A.2d 360, 363 (Pa. 1958) (no repeal by implication absent irreconcilable repugnancy between two statutes); *Patton v. Republic Steel Corp.*, 492 A.2d 411, 417 (Pa. Super. 1985) (same); *Duda v. State Board of Pharmacy*, 393 A.2d 57, 59 (Pa. Cmwlth. 1978) (same). *Cf. Kentuckians, supra* (no inconsistency between federal mining laws and Clean Water Act). No convincing evidence exists here. Although Subchapter F focuses on the impacts of subsidence, the subchapter is perfectly compatible with the more general but equally applicable requirements of the Clean Streams Law and the water-protection provisions of Chapters 86 and 89 of 25 Pa. Code. Consol has not shown how or why it would be impossible to comply with both Subchapter F and other water-protection provisions. We see nothing in the various provisions that make them mutually exclusive or repugnant to each other.

2002 EHB at 1045-1048. In *Consol II*, we reaffirmed that "the Department has the authority under the Clean Streams Law and 25 Pa. Code Chapters 86 and all of 89 to regulate the impacts of subsidence on waters of the Commonwealth." 2003 EHB at 243.

We reaffirmed several of these principles yet again in our one-judge opinion in *Consol III*, 2003 EHB 792, where we repeated that subsidence impacts can

constitute pollution and that a deep mine operator must show that unacceptable pollution will not occur as a result of its mining activities. 2003 EHB at 795 and 800. We repeated our holding from *Consol I* that the deep mining regulations do not preempt the Clean Streams Law and the regulations promulgated thereunder when it comes to the Department's authority to regulate the effects of mine subsidence. 2003 EHB at 800 n.7 and 806-07.

Thus, we reject UMCO's theory that planned subsidence under streams can *never* be prohibited. Turning to the second half of UMCO's argument, which is that "mining operators only have to take mitigation measures to protect foreseeable uses of streams to the extent technologically and economically feasible," UMCO seems to believe that the Department's authority is limited to making sure an operator has an adequate mitigation plan. So long as repairs are promised, the Department has no legal authority to deny a permit in UMCO's view; the Department has a mandatory duty to issue a permit.

We cannot agree that a promise to perform repairs trumps everything else in the forgoing discussion. There is nothing in the law that specifically supports UMCO's theory that it is acceptable, in UMCO's words, to "destroy" streams so long as feasible repairs are promised. The Subsidence Act contains no language supporting such a position, and the position flies in the face of the Clean Streams Law. Everything in the applicable laws points to the common sense notion that *prevention* of pollution and the *protection* and *maintenance* of values and uses. 35 P.S. §§ 691.5, 610, 611; 25 Pa. Code §§86.37(a)(3), 89.36(a),

§ 89.142(a). Nothing in Subsection 1406.5(e) or any other provision of the Subsidence Act supports UMCO's position that a mitigation plan authorizes destruction of streams. We would need to see specific regulatory language before adopting an approach as radical as UMCO's, and there simply is none.

UMCO places great weight on the fact that its mitigation plan is adequate. UMCO misunderstands the purpose and function of mitigation plans. Despite the best laid plans, things do go wrong. It is perfectly sensible when permitting, not only in the mining program but in virtually every program administered by the Department, to plan for unexpected contingencies. Applicants should be made to describe how they will handle a situation if things go bad. This is not to say that it is acceptable for things to go bad, or that it is expected that things will go bad. Quite the opposite. If it is known in advance that things will go bad, the permit cannot be issued in the first place. The fact that the Department requires deep mining permit applicants to describe how they will repair streams *if* they are damaged does not mean that it is acceptable to damage the streams. Stream mitigation plans are designed to address *unanticipated* damage, not to excuse or approve damage in advance. By way of analogy, the Department will not permit a mine when it is known that it will cause acid mine discharges. (T. 995.) The mine does not become permittable because an operator promises in advance to treat the discharges in perpetuity.

Finally, we are not convinced that UMCO submitted what can fairly be considered an adequate mitigation plan. A mitigation plan that promises to do

everything feasible where it is known that everything that is feasible will not fix the problem is not necessarily an adequate mitigation plan. Mitigation measures are required to *restore* the stream or at least maintain a stream's value and uses until it restores naturally. *Bethenergy*, 1994 EHB at 964. UMCO's mitigation measures will not restore the 6E watershed in general or the 6E Stream in particular. Flow augmentation may or may not be a suitable mitigation measure if it supplements natural flow and/or is temporary in nature; that issue is not presented in this case. Here, there will be *no* natural flow. Only city water will flow down what was formerly the 6E Stream channel. In addition, city water will need to be pumped into the channel in perpetuity. This is not restoration, and it is not maintenance in anticipation of eventual natural recovery. Pumping city water in perpetuity cannot be said to return what was once a naturally flowing, productive stream to its premining value and reasonably foreseeable uses. It does not return hydrologic balance, or repair the dynamic relationships among precipitation, runoff, evaporation, and changes in groundwater and surface water storage. UMCO is conceded to have proposed everything that *can* be done, but everything that can be done will not restore (or maintain pending anticipated natural restoration) the premining values and uses of the 6E Stream given the hydrogeology of this watershed. There will be a ditch for the conduction of city water, but there will not be a stream.

Thus, we have rejected UMCO's basic argument that it may mine under *any* stream with the only limitation being that it must promise to perform

feasible repairs that will maintain uses. As a fallback position, UMCO presents some theories in support of a contention that it is beyond the Department's authority to prohibit the dewatering of the 6E Stream in particular.[11] We also reject these theories.

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[11] PennFuture denounces the approach of analyzing the 6E Stream in isolation. We agree that it is important to not lose sight of the big picture. *See* 25 Pa. Code § 86.37(a)(4) (cumulative hydrologic impacts). UMCO's prior mining in Panels 2E through 5E has eliminated all surface waters above those panels. Not only has the 4E/5E Stream gone dry, every spring and seep in the watershed was dry as of the close of the record. Two small intermittent streams have been taken. Flow in 6E itself has already been reduced as a result of previous mining. Longwall mining of the 6E Panel would have eliminated *all* springs, seeps, and wetlands in 6E as well. UMCO has repeatedly complained that it has suffered because of one small, insignificant "ditch." (S.T. 29-30, 51-52, 69, 71, 84.) This characterization presents an incomplete and misleading picture of the true history of this site.

PennFuture is correct in asserting that there has been little or no thought given to the *cumulative* impacts of mining at the site. The 6E and 5E Streams combine to form a second-order stream, yet there was no discussion of the fate of that stream if *both* the 5E and 6E Streams were to lose all natural flow. (S.T. 954.) The delineation of the mining panels has everything to do with operational requirements but little to do with the ecology of the site, and yet the Department seemed to conduct its review of this mine as if the panels and the effects of mining those panels were completely separate and unrelated events. UMCO did the same. (S.T. 954.) Furthermore, the Department's panel-by-panel approach on an accelerated schedule resulted in a shortage of true baseline data. (S.T. 939-40.)

The segmented analysis has certainly inured to UMCO's benefit. Obviously, as one divides an environmental resource such as a watershed into smaller and smaller parts, the impact on any one disassembled part will appear less and less significant. Focusing all attention exclusively on the 6E Stream leaves out

UMCO's first argument specific to the 6E Stream is that the stream is not entitled to protection under the law (even if other streams are) because "[t]here is no designated use for the 6E Trib." (Brief at 60, 78.) Somewhat contradictorily, it argues that the stream is incapable of supporting existing or designated uses such as a warm water fishery (WWF). (*Id.*) Presumably, it follows that the Department has no authority to regulate activities affecting the stream. Before mining, the 6E Stream functioned only as "a drainage swale for precipitation" (Brief p. 78) and that is the only use and value that must be protected.[12]

In numerous exhibits and filings throughout the course of this litigation, UMCO has conceded that the 6E Stream supports a warm water fishery. Its own biology expert submitted multiple studies and testified repeatedly that the 6E Stream supports a warm water fishery. It has never been disputed that fish and myriad benthic organisms live in the stream. There is no record support for UMCO's arguments. In any event, as a tributary within the basin of Maple Creek, the 6E Stream is included in the stream basin's designated use as a WWF. 25 Pa. Code § 93.9. The stream also has the other designated statewide uses noted above. *See* 25 Pa. Code §§ 93.2, 93.4(a), 93.9 and accompanying tables.

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what has and will occur in the combined 6E/5E/4E watershed as a whole.

[12] 12 All of the parties, including UMCO, assume that 25 Pa. Code Chapter 93 applies. We will do the same.

The 6E Stream in fact functions as a WWF. The 6E Stream and appurtenant springs also serve as a water supply for the cattle herd on the farm that the stream runs through. (S.T. 129.) Thus, among the uses listed in the regulations, the 6E Stream has been shown to function as livestock water supply (LWS). It also functions as a wildlife water supply (AWS).

UMCO has not only failed to account for all of the actual and designated uses of the stream, it disregards the *value* of the stream. Values *and* uses must be protected. 25 Pa. Code § 89.141(d)(11) and § 89.142a(h). *See also* 25 Pa. Code § 89.65(a) (protection of fish, wildlife and related environmental values). A naturally flowing shallow ground water regime has value beyond its ability to sustain warm water fish, both as an independent unit and as a contributor of flow and biological support to larger downstream waters. *Machipongo*, 799 A.2d at 774; *Barnes & Tucker*, 319 A.2d at 882.

UMCO next argues in its post-hearing brief that the 6E Stream in particular is not entitled to any protection because it is not a perennial stream. (Brief p. 69.) We believe that UMCO abandoned this claim. In its original notice of appeal, UMCO listed the following objections:

> (3)(e) DEP incorrectly revised its conclusion that the unnamed tributaries above Panel 6 East are "perennial";
>
> (3)(f) DEP's prior decision that the unnamed tributaries above Panel 6 East were "intermittent" was, and is, correct.

When UMCO amended its notice of appeal to "significantly limit the number of issues raised by its initial notice of appeal," it eliminated these objections from its amended notice. UMCO did not assert that the 6E Stream was intermittent in its prehearing memorandum. UMCO did not present any testimony in clear contradiction of the Department's expert's opinion that the stream is perennial. Although UMCO failed to take any of the steps necessary to preserve the issue, the issue nevertheless rears its head again UMCO's post-hearing brief. This is improper procedure. *Chippewa Hazardous Waste v. DEP*, 2004 EHB 287, 290-91, *aff'd*, 971 C.D. 2004 (Pa. Cmwlth. 2004). We deem the issue to have been waived.

Even if the issue had not been waived, UMCO's claim that the 6E Stream is not perennial has no merit on the facts or the law. The 6E Stream is a perennial stream. (FOF 139-164.)

UMCO gets into a discussion about the various definitions of perennial streams and argues that the Department applied the wrong definition.[13] Our entry

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[13] *See* Brief at 70-72. UMCO sets forth three definitions for a perennial stream found in regulations and in the Department's technical guidance materials. UMCO argues that the Department incorrectly applied 25 Pa. Code § 89.5 as the controlling definition of "perennial stream." The § 89.5 definition (found in the general definitions for Chapter 89) focuses on, *inter alia*, the biologic makeup of a flowing water body. UMCO, however, claims that 25 Pa. Code § 89.141(b) should control, which defines a perennial stream as "a stream or part of a stream that flows continually throughout the calendar year." 25 Pa. Code § 89.141(b)(2). UMCO further asserts that some of the Department's technical guidance is congruent with the § 89.141 definition, providing that a stream

into that discussion would be purely *dicta* in this case because the 6E Stream is perennial under any and all of the various definitions and criteria proposed. Regardless of which factors one looks to define perennial flow, part of the 6E Stream actually flows continuously throughout the calendar year. Even without considering biological criteria (which appears to be UMCO's primary concern), the 6E Stream has been shown through eyewitness testimony and photographic and other evidence to have actually flowed throughout the calendar year.[14]

UMCO next argues that, even if the 6E Stream is a perennial stream, is not entitled to protection (beyond implementation of feasible repairs) because (1)

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is not perennial if "the stream experiences no flow." 1994 Program Guidance Manual; *see* Exhibit U-20.

[14] The farmer through whose land much of the 6E Stream flows testified at the supersedeas hearing. (S.T. 127-38). We described our reaction to his testimony in our supersedeas hearing as follows:

> UMCO presented the testimony of the owner of the land through which the 6E Stream flows. That witness exhibited a strong, argumentative bias in favor of UMCO. Putting that aside, that landowner never clearly testified that the entire reach of the stream went dry. Rather, he testified that the portion of the stream to the west of Route 481 historically went dry, although even the majority of that section has not dried up for the last three years. The very uppermost sections of the stream in the vicinity of the railroad tracks appear to be intermittent, but those sections overlie Panels 4E and 5E.

UMCO, 2004 EHB at 805. Our view of this testimony has not changed.

"it is a small stream regardless of its continuous flow characteristics," and (2) it does not flow continuously over its entire length over the entire calendar year. (See, e.g., Brief at. 73, 77.)

UMCO's novel argument that only "large" streams are entitled to protection is based on language in the Preamble to 25 Pa. Code § 89.142a(h), which reads as follows:

> The [Environmental Quality Board] believes that the current regulation in combination with the Department's technical guidance on perennial stream protection (TGD 563-2000-655) provides sufficient protection for perennial streams located above and adjacent to underground mines. Since implementing the guidance in January 1994, the Department has not encountered any situations when perennial streams have been adversely affected by diminution due to underground mining. The Board notes that the subsection applies only to larger streams which flow continuously throughout the calendar year, and that there are interests who believe that its application should be expanded to include smaller streams.

28 *Pa. Bulletin* 2761, 2774 (June 13, 1998) (U.Ex. 277).

We need far more than this preamble language to depart from the letter of the law itself. Preamble language has no legal effect in and of itself. 1 P.S. § 1924; *English v. Commonwealth*, 816 A.2d 382, 387 (Pa. Cmwlth. 2003). It can serve as an aid to interpretation of an ambiguous regulation, *English*,

816 A.2d at 387, but the regulations and statutes that control in this case are not ambiguous. The preamble language is unfortunate because it is, quite simply, wrong. There is no demarcation between "large" and "small" perennial streams anywhere in the law, and there never has been. There is no statute or regulation that creates such a distinction let alone defines the criteria for making such a distinction.

UMCO's argument is entirely inconsistent with the water-protection law in Pennsylvania. The Clean Streams Law contains no categorization between "large" and "small" streams. Rather, it defines "waters of the Commonwealth" to include "any and all...streams." 35 P.S. § 691.1. Water quality regulations nowhere distinguish between "large and small" streams, but instead relate to all surface waters. See, e.g., 25 Pa. Code §§ 93.1, 93.4. For example, in order to get a mining permit, an operator must demonstrate that there is no presumptive evidence of potential pollution to "any" waters of the Commonwealth. 25 Pa. Code § 86.37(a)(3). An operator must preserve and protect the entire hydrologic balance, not simply "large" streams that make up only one part of a hydrologic regime. 25 Pa. Code § 89.36(a).

Putting all of this aside, who is to say what constitutes a "large" stream? It is difficult to picture a regime where Department personnel would need to assess whether a perennial stream is "large" or "small" as the defining criteria precedent to permitting and other regulation. The 6E Stream is not necessarily "small" stream. While it is true that it is narrow, it is fairly long--over 2,600 feet. Its headwaters consist of numerous springs, seeps, and wetlands, and portions

of it manage to flow all of the time, even in periods of drought. We mention this to illustrate that, even in the context of this case, differentiating between "small" and "large" is simply too subjective to serve as a defining regulatory criterion.

UMCO's related argument to the effect that only streams that have continuous flow *over their entire length* is also wrong. Even the regulation relied upon by UMCO defines a stream as perennial if any portion of the stream is perennial:

> For the purposes of this subchapter, a perennial stream is a stream *or part of a stream* that flows continuously throughout the calendar year as a result of groundwater discharge or surface runoff. The term does not include intermittent or ephemeral streams (emphasis added).

25 Pa. Code § 89.141(b)(2).

We have as much difficulty with UMCO's proposed "entire length" standard as we did with its large/small dichotomy. Does a one-foot dry section render an entire stream intermittent? Does the "entire length" include every spring and headwater? If so, no headwater stream in Pennsylvania would be likely to be subject to protection. It is doubtless for this reason that the Environmental Quality Board drafted the regulation to define a stream as perennial when any part of that stream is perennial.

In this connection, UMCO refers us to *Bethenergy Mines, Inc. v. DER*, 1994 EHB 925, but in that case the Board quoted the regulation relied upon by UMCO, 25

Pa. Code § 89.141(b)(2), 1994 EHB at 963 (a perennial stream is a stream *or a part of a stream* that flows continuously). We made the following conclusion of law:

> 5. Bethenergy was required to conduct its mining activities in Mine No. 33 in a manner that maintained the value and reasonably foreseeable uses of streams *or parts of streams* that flow continuously throughout the year.

2004 EHB at 978 (emphasis added).

The Board went on to sustain the appeal from a Department order that required the mine operator to restore perennial flow over the entire length of a stream because the Department failed to establish factually that the entire stream had perennial flow premining. The discussion concerning the "entire length" of the stream resulted from the terms of the Department's order. The Board did not hold that there must be continuous flow over the entire length of a stream for the stream to be considered perennial under applicable regulations. In fact, it held exactly the opposite.

Bethenergy has limited utility in this case because, most obviously, there is no doubt in our mind that the 6E Stream flows perennially premining. Furthermore, as we discussed in *Consol I*, *Bethenergy* has limited application regarding legal issues

> because the Board did not get into a detailed analysis of the law as a result of the

Department's failure of proof. For example, although our focus here is upon the Clean Streams Law and the mining regulations promulgated thereunder, in *Bethenergy* we stated that, given the Department's failure of proof, there was no need to address the Department's authority to issue the order under the Clean Streams Law. [1994 EHB at 978.]

Nevertheless, it is worth mentioning that the Board applied Section 89.52 (protection of hydrologic balance), which is not contained in Subchapter F of Chapter 89. This is inconsistent with Consol's theory that subsidence is regulated exclusively under Subchapter F. Furthermore, even though Roaring Run was found to be an intermittent stream, the Board presumed that Section 89.52 applied to the stream when it found that the order could not be sustained because the Department failed to prove *as a factual matter* that the hydrologic balance of Roaring Run had been altered. The Board also applied Section 89.52 to Howell's Run, another intermittent stream, concluding that the facts did not support a finding that Section 89.52 had been violated. While it is debatable whether too much can be read into these findings given the Department's failure of proof, *Bethenergy* is certainly not inconsistent with our holding today that the Clean Streams Law and all of Chapters 86 and 89, not just Subchapter F of Chapter 89, apply to the

> subsidence impacts of underground mining on all waters of the Commonwealth.

Consol I, 2002 EHB at 1050.

In any event, UMCO's longwall mining of Panel 6E would have dewatered the entire length of the 6E Stream that flowed perennially. Assuming *arguendo* that the Department needed to prove dewatering over the stream's entire length, it did so. The Department's order relates to all those portions of the 6E Stream that flow perennially.

UMCO complains that the Department required too much proof of perennial flow in this case. We are not sure what difference this makes now, but in any event, UMCO incorrectly believes that the Department had a binding policy that an operator could conclusively prove that an entire stream is intermittent by bringing in one photograph of one point on the stream showing no flow at one moment in time. Mr. Kernic testified that such photos serve as evidence, not conclusive proof. (T. 276.) In any event, such a policy, even if it existed, was not part of any binding regulation. Contrary to UMCO's argument, the Department cannot be said to have departed from a policy that never existed in the first place.

That such a policy could not be considered to be faithful compliance with applicable regulations is illustrated by this case. UMCO initially tried to convince the Department that the 6E Stream was ephemeral, i.e., a natural collection point for stormwater runoff and nothing more. In order to make its case, UMCO relied on photographs of the small

section of the 6E Stream that happened to be disturbed by the installation of a sewer line. The record in this case shows that no responsible scientist, regulator, or operator would contend that such photos are truly representative of the 6E Stream as a whole.

II. UMCO's Second Objection: Improper Rulemaking

UMCO's second objection reads as follows:

> The Department acted in a manner contrary to law in enforcing and otherwise implementing regulatory concepts or definitions of general applicability without proper rulemaking or procedures relating to the implementation of policy. These actions include but are not limited to, the Department's improper application of a Board decision in its administration and application of underground mining regulations and stream protection guidance.

UMCO argues that the Department has improperly expanded the definition of a perennial stream. Under the one definition, a perennial stream flows continuously throughout the calendar year. (1994 Technical Guidance Manual.) See also 25 Pa. Code § 89.141. Under a different definition, the Department considers biological criteria among other things in determining whether a stream flows perennially. 25 Pa. Code § 89.1. UMCO seems to be arguing on principle because it has waived and/or conceded its contention that the 6E is anything other than a perennial stream. We have found abundant evidence to prove that the stream flows continuously regardless

of what regulatory definition applies. We will not decide purely academic issues. *Stevens v. DEP*, 2001 EHB 653, 655.

Other than the purported change regarding perennial streams, UMCO does not direct our attention to any other new binding norm in its brief. Of course, the Order itself is very case-specific and does not constitute a new rule. In short, we will decline UMCO's request to issue an advisory opinion with no practical significance whatsoever regarding the Department's rulemaking authority.

III. Constitutional Issues

The third objection in UMCO's Amended Notice of Appeal reads as follows:

> The Department's action deprives UMCO of rights guaranteed by the Constitution of the United States of America and the Commonwealth of Pennsylvania including, but not limited to, equal protection and due process rights.

A. Takings

UMCO fleetingly mentions a takings claim for the first time in its post-hearing brief. It was never mentioned before, not even in UMCO's prehearing memorandum. Therefore, UMCO failed to preserve this issue.

Furthermore, a takings claim has elements that are distinct from any other claim and this case was simply

not tried on that basis. As we discussed at considerable length in *Davailus v. DEP*, 2003 EHB 101, a governmental action that limits a property owner from making certain uses of private property is not ordinarily considered a taking of private property for which compensation must be paid. *See* U.S. CONST. Amend. V; PA. CONST., art. I, § 10; *Machipongo Land & Coal Co. v. DEP*, 799 A.2d 751, 763, (Pa.), *cert. denied*, 537 U.S. 3 (2002). It is only where a governmental prohibition "goes too far" that it constitutes a taking. *Machipongo*, 799 A.2d at 765, (*citing Pennsylvania Coal Co. v. Mahon*, 260 U.S. 393, 415 (1922)); *Domiano v. DEP*, 1999 EHB 408, 421. Had UMCO intended to pursue a takings claim, it would have needed to show that the Department's Order deprived it of all economically beneficial use of its property, *Machipongo*, 799 A.2d at 769; *Lucas v. South Carolina Coastal Council*, 505 U.S. 1003, 1027 (1992); *Davailus*, *supra*, or that its loss was unduly oppressive when balanced against what the public has gained, *Machipongo*, 799 A.2d at 770-71; *Penn Central Transportation Co. v. City of New York*, 438 U.S. 104, 124-25 (1978); *Davailus*. The latter takings balancing analysis involves consideration of such factors as the economic impact of the regulation on the claimant, particularly the extent to which the regulation has interfered with distinct investment-backed expectations, as well as the character of the governmental action, whether there has been a physical invasion, whether the regulation is reasonably related to the promotion of the general welfare, and whether the health, safety, morals, or general welfare would be promoted by prohibiting certain uses of land. *Machipongo*, 799 A.2d at 770-71. While UMCO may have incidentally touched on some

of these issues in passing, it cannot be said that UMCO put forth a record necessary to support a takings claim. For example, only the most sketchy financial information was presented during the supersedeas hearing regarding the economic impact of the Order. (P.F.S.Ex. I, J, K; U.S.Ex. X.) This evidence was intended to bolster UMCO's claim of irreparable harm at the time. It was not refined or pursued at the hearing on the merits, and the evidence falls far short of the showing that would be necessary to flush out the economic-impact factor in a takings analysis. *Compare Davailus*, 2003 EHB at 142-157.

In any event, it is probably worth noting that the Department's Order hardly amounts to the sort of regulatory action that has "gone too far." Obviously, the Order did not deprive UMCO of all economically beneficial use of its property. With regard to balancing private loss against public benefit, the Order only affected one of UMCO's eleven panels. It was not one of the larger panels. The Order only precludes longwall mining in that panel. We understand that longwall mining is far more efficient and profitable (S.T. 974), but it is well settled that a taking does not result merely because a regulation may deprive a landowner of the most profitable use of its property. *Miller & Son Paving, Inc. v. Plumstead Twp.*, 717 A.2d 483, 486 (Pa. 1998), *cert. denied*, 525 U.S. 1121 (1999); *United Artists' Theater Circuit, Inc. v. City of Philadelphia*, 635 A.2d 612, 617 (Pa. 1993) (*citing United States v. Cent. Eureka Mining Co.*, 357 U.S. 155, 168 (1958)). As to the public benefit side of the equation, the Department's action has potentially saved a perennial

stream from being removed from the map.[15] The stream is the only remaining vestige of surface water in an area of the Maple Creek watershed that has already been compromised by UMCO's mining. Depriving UMCO's of a relatively small percentage of the total reserves at the site (S.T. 963-68) in order to save a stream is not sufficient to amount to a meritorious takings claim.

B. Due Process

UMCO did not pursue a due process issue in its prehearing memorandum. Like the taking claim, it has been waived. In any event, the exhaustive review of the Department's action by this Board surely satisfies UMCO's right to due process. 35 P.S. § 7514; *Department of Environmental Resources v. Steward*, 357 A.2d 255, 258-59 (Pa. Cmwlth. 1976); *DER v. Borough of Carlisle*, 330 A.2d 293, 296-97 (Pa. Cmwlth. 1974); *DER v. Derry Township*, 314 A.2d 874, 868, 874 (Pa. Cmwlth. 1973); *Solomon v. DEP*, 2000 EHB 227, 240.

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[15] *See* PA CONST. art. I, Section 27 ("The people has a right to clean air, pure water, and to the preservation of the natural, scenic, historic and esthetic values of the environment. Pennsylvania's public natural resources are the common property of all the people, including generations yet to come. As trustee of these resources, the Commonwealth shall conserve and maintain them for the benefit of all the people.").

C. Equal Protection

1. Vis-à-vis Surface Developers

UMCO argues that Judge Labuskes erred by excluding evidence showing that UMCO has been improperly discriminated against vis-a-vis surface developers whose activities "were known to destroy streams." UMCO has contended that the Department treats large retail developments and highway construction projects quite differently than underground coal mines when it comes to regulating impacts on streams. We ruled at the hearing that shopping malls and underground coal mines are not similarly situated parties as a matter of law and we excluded the evidence. UMCO made a proper offer of proof and has otherwise properly preserved the issue. Upon reflection, we have decided to allow UMCO to present the evidence that was offered at the hearing to support its claim. We have scheduled a hearing in the near future for that purpose. We will address this aspect of UMCO's equal protection argument following that hearing. We express no opinion here regarding the merits of the claim. There is no overlap between the elements of this claim and UMCO's other objections to the Department's Order, so there was no reason to delay issuance of this Adjudication.

2. Vis-à-vis Other Deep Mine Operators

UMCO also contended in its prehearing memorandum that it has been discriminated against vis-a-vis other deep mine operators. Judge Labuskes allowed UMCO to present evidence on this aspect of its equal protection claim at the hearing and it is ripe for

adjudication. UMCO, however, has not pursued the claim in its post-hearing brief. UMCO included a few proposed findings of fact that appear to relate to its alleged disparate treatment versus other underground mines (Brief at 48-50), but it does not otherwise articulate an argument, cite any law, or develop or pursue this equal protection claim in its brief in any way. Accordingly, it has been waived.

We will note for the record that there was no evidence in UMCO's case of any fact pattern where the Department allowed a deep mine operator to mine under a perennial stream knowing in advance that the stream would be permanently dewatered, the only possible exception being UMCO's mining of Panel 5E. The equal protection clause generally prohibits differences in treatment of similarly situated parties based upon a constitutionally suspect standard (not applicable here) or other classification lacking in rational justification. *F.R.&S., Inc. v. DEP*, 1998 EHB 947, 949. There are no similarly situated persons evident here. If there is any party who has been given an unfair advantage vis-a-vis other members of the regulated community, it is UMCO. UMCO was permitted to mine at the shallowest cover longwall mine in the state on an expedited schedule pursuant to "informal permit revisions" issued without public notice of any kind on the basis of poorly developed baseline data. Other operators have been required to submit extensive premining data. (T. 1549.) The Department witnesses testified convincingly that the Department has not and will not permit any mine where, as here, it is known that a stream will be permanently taken. (T. 970, 983.) UMCO has failed to make a case that the Department has treated similarly

situated coal companies dissimilarly and its equal protection claim vis-a-vis other deep mine operators must fail.

CONCLUSIONS OF LAW

1. This Board has jurisdiction over the parties and subject matter of this appeal.

2. Proceedings before the Board are *de novo*. *Warren Sand & Gravel Co., Inc. v. DER*, 341 A.2d 556 (Pa. Cmwlth. 1975).

3. When a notice of appeal raises the issue, the Department would ordinarily have the burden of proving by a preponderance of the evidence that its order is supported by the facts, it is reasonable, and it is lawful.

4. A party, however, is limited to the objections set forth in its notice of appeal.

5. UMCO's carefully limited its appeal to a challenge that the Department acted unlawfully. Specifically, it objects to the Department's action because the Department (1) applied to substantive law incorrectly, (2) engaged in improper rulemaking, and (3) violated UMCO's constitutional rights.

6. Although not included in UMCO's appeal, for purposes of creating a complete record, we hold that the Department satisfied its burden of proving by a preponderance of the evidence sufficient facts to support issuance of the Order and that the Department acted reasonably by issuing the Order.

7. The 6E Stream and appurtenant springs, seeps, and wetlands are waters of the Commonwealth.

8. The 6E Stream is a perennial stream.

9. The 6E Stream's uses are warm water fishery, agricultural and wildlife water supply, and esthetics. The stream also has value as a natural resource.

10. The complete and permanent elimination of all natural flow in the 6E Stream constitutes pollution, eliminates the value of the stream, eliminates the actual and designated uses of the stream, disrupts the hydrologic balance, constitutes an adverse hydrologic consequence, and does not protect fish, wildlife and related environmental values.

11. Neither the Clean Streams Law nor the Mine Subsidence Act supersede each other and both must be reconciled.

12. The Mine Subsidence Act does not exempt deep mines from compliance with the Clean Streams Law. To the contrary, Section 9.1 of the Mine Subsidence Act, 52 P.S. § 1406.9a(d), requires underground mine operators to comply with any and all requirements of the Clean Streams Law and regulations promulgated thereunder.

13. Longwall mining is an acceptable mining method in Pennsylvania and cannot be prohibited simply because it causes subsidence resulting in material damage. 52 P.S. § 1406.5(e).

14. An operator must adopt measures to:

a. prevent subsidence causing material damage to the extent technology and economically feasible;

b. maximize mine stability; and

c. maintain the value and reasonable foreseeable use of surface land.

52 P.S. § 1406.5(e). At a minimum, underground mining must be conducted in a manner that maintains the value and reasonably foreseeable uses of perennial streams. 25 Pa. Code § 89.142a(h)(l).

15. The Department has the legal authority to preclude longwall mining that will completely and permanently dewater a perennial stream. The Department does not have a mandatory duty to permit such mining.

16. The Department's authority to preclude such mining is not lost because an operator commits to perform mitigation measures.

17. UMCO has waived or failed to prove its claims that it was denied due process, equal protection vis-a-vis other longwall mines, or that there has been a taking without compensation.

18. UMCO has not shown that the Department has adopted any new binding norm, or if it has, that it has any significance in this case.

19. The Department had the legal authority to issue the Order. It applied the law correctly in issuing the Order.

COMMONWEALTH OF PENNSYLVANIA
ENVIRONMENTAL HEARING BOARD

EHB Docket No. 2004-245-L

[Issued: September 5, 2006]

UMCO ENERGY, INC.	)
	)
v.	)
	)
COMMONWEALTH OF PENNSYLVANIA, DEPARTMENT OF ENVIRONMENTAL PROTECTION and CITIZENS FOR PENNSYLVANIA'S FUTURE, Intervenor	)

ORDER

AND NOW, this 5th day of September, 2006, it is hereby ordered as follows:

1. The record is reopened for the limited purpose of receiving the evidence set forth in UMCO's offer of proof in support of its objection that it has been denied equal protection *vis-à-vis* surface developers. The hearing shall reconvene at 10:00 a.m. on **September 26, 2006** at the Pittsburgh offices of the Board. Jurisdiction is retained pending resolution of UMCO's remaining equal protection objection.

2. UMCO's appeal is in all other respects dismissed.

ENVIRONMENTAL HEARING BOARD

MICHAEL L. KRANCER
Chief Judge and Chairman

GEORGE J. MILLER
Judge

THOMAS W. RENWAND
Judge

MICHELLE A. COLEMAN
Judge

BERNARD A. LABUSKES, JR.
Judge

DATED: September 5, 2006

APPENDIX D

IN THE SUPREME COURT OF PENNSYLVANIA WESTERN DISTRICT

No. 27 WAL 2008

[Filed July 1, 2008]

UMCO ENERGY, INC.,	)
	)
Petitioner	)
	)
v.	)
	)
DEPARTMENT OF ENVIRONMENTAL PROTECTION,	)
	)
Respondent	)

Petition for Allowance of Appeal from the Order of the Commonwealth Court

ORDER

PER CURIAM

AND NOW, this 1st day of July, 2008, the Petition for Allowance of Appeal is **DENIED**.

A True Copy Patricia Nicola

As of: July 1, 2008
Attest: /s/
Chief Clerk
Supreme Court of Pennsylvania